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WOMAN AND CHILD WAGE-EARNERS IN GREAT BRITAIN.

BY VICTOR S. CLARK, PH. D.

INTRODUCTION.

Because the modern factory system began in Great Britain and, together with material blessings, brought social evils, the first factory laws were enacted in that country. Since then constant conflict has continued between the destructive forces of untrammeled industry, sacrificing its servants to its dominant end, production, and the protective intervention of society, staying those forces in the interest of humanity. This conflict has resulted in a highly developed system of factory legislation, based on over a century of experience. But many evils still afflict workers for which remedies remain to be discovered. Recent enactments and projected laws do not stop at the factory and workshop, but seek to correct abuses in the very homes of the operatives. A complete view of the legislation affecting wage-earners, therefore, must regard not only past measures, but also those in prospect, and the justification of the latter in existing evils. In a progressive country social legislation is never static, and tendencies are as illuminating as attainments. This is particularly true of Great Britain, where advanced factory regulation has prepared the way for progress in a new direction.

Although British experience with factory laws is so extensive and long continued, and the general social effect of these laws is understood, their detailed economic effect has not yet been fully studied. It might be argued that these laws have recorded rather than caused the improvement in the condition of factory workers during the last century. The question remains open whether they have checked or accelerated the progress of particular industries. No searching analysis of the influence of the factory acts in these directions has yet been made, and statistical data for a complete demonstration of this influence are now lacking. But there have been partial investigations, both public and private, of several of the problems here suggested. The literature, documentary and otherwise, that has thus grown up around this subject in Great Britain, is the most valuable that we have illustrating the effect of laws upon social and industrial conditions.

THE FACTORY LAWS.

The first English factory act was passed in 1802, to protect the health and morals of parish apprentices employed in cotton and woolen mills. It marked the transition from the old regulation of trade apprenticeship to the new factory legislation. In 1819 a second law prohibited the employment in cotton mills of any children under 9 years of age and limited the working hours of children under 16 years of age to 12 a day. The act of 1825 retained 16 years as the age of those whose hours of work were thus limited, but in 1831 this provision was extended to all young persons under 18, and night work by persons under 21 was forbidden. The act of 1833 extended these regulations to all textile industries, and required that children under 13 should be employed only 48 hours in one week and not more than 9 hours in one day, and factory inspectors were appointed to enforce the law. In certain respects, therefore, the laws regulating the employment of children were more advanced in Great Britain 75 years ago than they are in some American States at the present time.

The effect of these acts was to cause women to be substituted for children in low-paid occupations. Many arguments, both physiological and moral, were urged against unregulated female employment, especially at night, and in 1844 women were brought under the provisions hitherto applying to young persons.

For 25 years prior to 1850 there was agitation in England in favor of a 10-hour day for factory women and children. In 1847 such a law was passed, but employers were allowed so much latitude in selecting the period within which the 10 hours should be worked as largely to nullify its benefit. Three years later the working hours were increased to 10½, but required to be continuous except for meals. The next 20 years saw little addition to the law, but witnessed its extension to nearly all manufacturing establishments, and increasing efficiency in its administration. In 1874 the hours of females and children employed in textile mills were reduced to 56½ per week. From this time opinion began to be divided as to the desirability of laws limiting the working conditions of women. A party supported by some women workers maintained that these regulations made employers prefer men in occupations previously filled by women, and thus drove the latter out of positions. Recently woman suffragists have denied the right of a parliament elected exclusively by male voters to make regulations applying only to women. There seems to be more opposition from these sources than from employers to the further regulation of women's work in Great Britain. Meantime the act was extended to workshops, and, partly on account of the opposition to restricting female employment, was given only limited application to women workers in shops where no children were employed, while in domestic workshops, employing no persons outside of members of the family, women were entirely freed from regulation. This was no boon to the latter; for these exempted shops have since proved the chief seats of long hours, low wages, insanitary conditions, and all the other evils of sweating.

The following table, compiled and extended from one published in the Journal of the Royal Statistical Society in 1902, gives in brief form the main provisions of the various laws affecting hours of work:

YEAR OF PASSAGE AND MAIN PROVISIONS AFFECTING HOURS OF WORK, OF FACTORY ACTS OF GREAT BRITAIN.

Year.	Industries affected.	Operatives affected.	Details.
1802	Cotton	Apprentices	12-hour day, between 6 a. m. and 9 p. m.; night work regulated.
1819	Cotton	Children	Minimum age, 9 years; children 9 to 16 years limited to 12 hours a day.
1825	Cotton	Children	Saturday's work limited to 9 hours, before 4.30 p. m.; weekly hours, 69. Work day from 5 a. m. to 8 p. m.
1831	Cotton	Children, 9 to 13; young persons, 13 to 18 years.	Prohibited night work for employees under 21; children and young persons limited to 12 hours daily and 69 weekly.
1833	Textiles	Children, 9 to 13; young persons, 13 to 18 years.	Children limited to 9 hours daily, 48 weekly; young persons remain 69 weekly, 5.30 a. m. to 8.30 p. m. Extended to all textiles.(a)
1844	Textiles	Children, young persons, and women.	Children half-time system, 6½ hours daily or 10 hours for 3 alternate days. Women to work same hours as young persons.
1845	Print works	Children, young persons, and women.	Extension to print works.
1847	Textiles	Young persons and women	"Ten Hours Act;" 11 hours daily and 63 weekly from July 1, 1847; 10 hours daily and 58 weekly from July 1, 1848.
1850	Textiles	Young persons and women	Hours 10½ daily, 60 weekly, between 6 a. m. and 6 p. m. or 7 a. m. and 7 p. m. and to 2 p. m. Saturdays.
1853	Textiles	Children	Extension of act of 1850 to children.
1860	Bleaching and dye works.	Children, 8 to 13; young persons, 13 to 18 years; women.	Except bleaching in open air; 12-hour day, between 6 a. m. and 8 p. m. and to 4.30 p. m. Saturdays.
1861	Hosiery and lace	Children, 8 to 13; young persons, 13 to 18 years; women.	Extends acts of 1850 and 1853, except youths 16 to 18 may work 9 hours between 4 a. m. and 10 p. m.
1864	Fustian cutting, cartridge making, pottery.	Children, young persons, and women.	Extends acts previously applying to textiles.
1867	Workshops and factories.	Children, young persons, and women.	Extends act to any premises constituting one trade establishment employing 50 or more in manufacturing. Hours in workshops regulated.
1870	Print, bleach, and dye works.	Children and young persons.	Open-air work regulated.
1871	Brick and tile works.	Children and young persons.	Children under 10 years and females under 16 prohibited.

[a] Factory inspectors were first appointed in 1834.

YEAR OF PASSAGE AND MAIN PROVISIONS AFFECTING HOURS OF WORK, OF FACTORY ACTS OF GREAT BRITAIN—Concluded.

Year.	Industries affected.	Operatives affected.	Details.
1874	Textiles	Children 10 to 13 years, young persons 13 to 18 years, and women.	Employment of children under 10 forbidden. Children's hours as before, but not to be employed Saturdays if working over 5 hours any day of the week. Hours 56½ weekly. After Jan. 1, 1876, minimum "full time" age 14 years, unless evidence of proficiency in school.
1878	Textiles	Children, young persons, and women.	Children 6½ daily, or 10 hours for 3 alternate days, between 6 or 7 a. m. and 1 p. m.; or between 1 p. m. and 6 or 7 p. m. On Saturday work to end at 1 p. m.
	Nontextile	Children, young persons, and women.	Children same as in textile mills, but to end Saturdays 2 p. m. Young persons and women 10½ hours, 6 a. m. to 6 p. m., 7 a. m. to 7 p. m., or 8 a. m. to 8 p. m. Exceptions. Saturdays end at 2 p. m.
	Workshops	Women only	Workshops not employing children or young persons, 10½-hour day, between 6 a. m. and 9 p. m. Saturdays till 4 p. m. Other workshops same as nontextile factories.
	Domestic workshops.	Children and young persons.	Children as in nontextile factories; young persons as in workshops; women not regulated.
1891	Domestic workshops.	Children only	Minimum age for half timers raised from 10 years to 11 years.
1895	Factories and workshops.	Children, young persons, and women.	Young persons' overtime prohibited; women's overtime limited to 2 hours a day, 3 days a week, 30 days a year, with exceptions. Regulation extended to laundries.
1901	Factories and workshops.	Children, young persons, and women.	No child under 12 to be employed. Many detailed provisions governing hours of employment in particular industries and establishments. Period of employment in textile factories reduced 1 hour Saturdays.

The last amendments have reduced the hours of work in textile factories to 55½ a week, and have established numerous minor but important regulations, relating especially to sanitation and dangerous trades. Meantime each year's experience has resulted in more efficient administration, and more liberal provision has been made for the enforcement of the law.

The present acts apply in many respects to men in common with women and children, and are enforced equally in factories where only adult males are employed. Such provisions, especially those relating to sanitation, fire protection, and guarding dangerous machinery and processes, do not belong to our topic, though their benefit is perhaps most felt by young persons and delicate female workers. The demands of health, comfort, and decency are as well considered in most British factories as in the homes of the operatives, and in many cases working surroundings are superior to those of the domestic circle.

The measures applying exclusively to woman and child factory workers, which therefore embody Great Britain's answer to the problem of their particular welfare, relate chiefly to time and duration of continuous labor and to employment in injurious or dangerous trades. Other regulations are mostly subordinate to these two main matters.

The time of employment of women and children varies, and in case of children it is conditioned by age and education.

A child may begin working in a factory or workshop, or above ground at a mine, when 12 years old, providing (1) that it secures a certificate of physical fitness from an official examining surgeon, (2) that it has passed in school a certain required standard set by the local authorities, and (3) that it continues to attend school regularly half time. Half timers may work either alternate days or in morning or afternoon shifts, attending school the remaining days or shifts. In the latter case the shifts must be alternated each successive week. At 13 years old a child with the proper physical certificate may begin working full time in a factory, or underground in a mine, provided it has passed the fifth grade or has attended school five full years of "350 attendances" since it was 5 years old. Otherwise a child remains a half timer until 14. At 14 children become "young persons" in the eyes of the British law and remain so until 18 years old. There is no further educational requirement, but in order to acquire this status they must be reexamined and must secure a new physical certificate from the certifying surgeon. In textile factories young persons may work, subject to the legal meal intervals, from 6 or 7 a. m. to 6 or 7 p. m., respectively, so long as the aggregate hours do not exceed 55½ weekly, and in other factories either the same hours or from 8 a. m. to 8 p. m., and not more than 60 hours in one week. There is a short day Saturday. Women are in most cases subject to the same regulations as young persons, except that in certain industries they may work a limited amount of overtime. When working in his family, termed by the law in a "domestic workshop," a child may be employed only half time, and a young person may work only between 6 a. m. and 9 p. m., ordinary days, with 4½ hours of intermission, and from 6 a. m. to 4 p. m. on Saturdays, with 2½ hours' intermission. Women in domestic workshops may work the hours they please any day but Sunday.

In textile factories 2 hours of the 12 must be allowed for meals, and in other factories and in shops 1½ hours; and in these two classes of factories, respectively, the meal hours must not be more than 4½ or 5 hours apart.

Overtime for children and young persons hardly exists in Great Britain, the few exceptions being in seasonal occupations or where perishable products are handled. Women may work overtime, when notice has been given to the factory inspector; but not later than 10 p. m., nor more than 2 hours a day, nor more than 3 days in one week, nor more than 30 days in any year.

These are in substance, omitting minor details, the regulations to prevent excessively protracted work for women and children. Overwork, however, depends upon intensity as well as time. Intensity is unregulated. The act is sometimes evaded, especially by small employers; and some factories send away work to be done by employees illegally at their homes outside of factory hours. On the other hand, in many establishments women and children do not work the full legal time; so that their average hours in all factories are probably less than the maximum allowed by law.

Employers are forbidden "knowingly" to employ a female operative within 4 weeks after childbirth; but it is so difficult to secure convictions under this provision, because employers can plead ignorance of the facts, that evasions frequently occur.

The jurisdiction of the factory act is very wide, applying to all establishments within the definition without regard to number of employees, including laundries and bakeries, and to workshops where either women or children are employed. Building operations, wharves, warehouses, and railway sidings are subject to the law only as to the reporting of accidents. Establishments where dangerous trades or processes are carried on are required to observe, in addition to the ordinary provisions of the act, such rules for the protection of employees as may be issued by the home secretary. These factories include all those engaged in the manufacture of lead colors, or where lead dye, glaze, decoration, or enamel is used, match factories using phosphorus, places where poisonous or explosive chemicals are manufactured or used, shops for the mixing and casting of brass or where files are cut by hand, establishments handling or employing in manufacture wools and hairs likely to carry anthrax contagion—such as hat factories, some spinning and weaving factories, and tanneries—houses bottling aerated waters, and places where derricks and locomotives are used in immediate connection with a manufacturing establishment. Many of these special regulations do not affect women and only incidentally affect boys; but in some industries the employment of children, young persons, and women is either greatly restricted or altogether forbidden. Women are not allowed to work in white-lead works, and no longer are employed in certain occupations in brass foundries. Children may not operate or clean dangerous machinery, and young persons and women may not clean such machinery while in motion. Children shall not be employed to carry too heavy burdens, or be otherwise employed so as excessively to tax their strength or attention. In granting a physical certificate to a child beginning work as a half timer or to a young person, the certifying surgeon may prescribe the particular work the child is capable of doing without injury, and may make the certificate authorize the child's employment only in that class of work. A factory inspector may at any time suspend or annul the physical certificate of a child or young person, either for violation of its provisions, or because the child's health or strength appears to him unequal to the tasks prescribed or to any further factory work. The child may then be reemployed only after a new physical examination and the issuance of a new certificate by the certifying surgeon.

Regulations governing home work and domestic workshops apply peculiarly to women and children. A domestic workshop is defined by law as "a private house, room, or place, which though used as a dwelling, is by reason of the work carried on there a factory or a workshop, as the case may be, within the meaning of this act, and in which neither steam, water, nor other mechanical power is used in aid of the manufacturing process carried on there, and in which the only persons employed are members of the same family dwelling there." Since no number of workers is specified, this brings within the purview of the law most outworkers, who receive clothing and other materials from a factory for making up. If any outworker uses assistance, whether paid or not, outside his immediate family dwelling with him, his place becomes a workshop under the broader definition, and is subject to still more complete supervision. Persons who give out work in certain industries must keep a list of the names and addresses of outworkers, and forward copies of these twice a year to the local authority and, on demand, to the factory inspector. Though this is primarily a sanitary regulation, and an employer is required to cease giving out work to places where conditions may endanger public health, incidentally such shops are thus brought under stricter general control. This not only enables greater supervision over the hours of work and the age of employment, but also helps in enforcing other requirements of the act which, though in principle applying equally to all workers, in practice are chiefly a safeguard to women and children. These are the provisions prohibiting excessive fines or deductions for imperfect work or damaged materials; payment in goods or charges for extras, such as light and heat, and those compelling the employer to give "particulars," that is, to allow a pieceworker an itemized account of the price to be paid for each kind of work.

Employment in mines and upon railways is regulated by separate acts. There are also special laws, relating more particularly to employment in stores and shops and the work of children outside of factories, that affect the condition of saleswomen and younger wage-earners. School ordinances and other local regulations also influence the condition of the latter.

ADMINISTRATION OF THE FACTORY LAWS.

The various laws regulating conditions of work in Great Britain are enforced by four groups of inspectors—factory inspectors, mines inspectors, and railway inspectors, all of whom are officials of the central Government, and public health officers and other inspectors appointed by local authorities. The factory, mine, and railway inspectors have distinct spheres of jurisdiction; but all of them, and especially the factory inspectors, may be called upon to cooperate with the officers of the local government. Laws affecting women and children employed in commercial, as distinct from industrial, pursuits are for the most part administered solely by the local authorities. Such, for instance, are the Seats for Shop Assistants Act, 1899; the Shop Hours Act, 1892 and 1904, and the Employment of Children Act, 1903. Municipal officers cooperate with factory inspectors principally in sanitation and education. Local building ordinances govern the construction and arrangement of factories and workshops; but these must conform also to the requirements of the factory laws as to space, light, ventilation, fire protection, and general sanitation. The relations between factory inspectors and local health officers are so regulated that if the latter neglect to enforce acceptable regulations in the matters subject to their special jurisdiction the factory inspector, upon authorization by the secretary of state, may himself issue and enforce the necessary orders. He can recover the expense from the local government. The factory inspector may require the assistance of the city police to enforce any provision of the act. Local educational authorities prescribe the standard of school advancement for half-time certificates, and may forbid half time altogether, as in certain cities (notably London) they have done. They also work together with the factory department in enforcing the compulsory-education law.

There are now 200 factory inspectors, including office staffs. Under their scrutiny are five and a half million employees and over a quarter of a million factories and workshops. Assisting these are the local inspectors mentioned and more than 2,000 certifying surgeons. These surgeons are not salaried, but receive a fee from the employer for each prospective worker examined. Unless a factory has fewer than 5 employees the physical examination must be at the factory itself, and is issued for employment in that factory, and, as just stated, for certain occupations. Therefore, usually no question can arise as to the identity of the child holding the certificate; and since the surgeon has nearly the same rights of visitation as the factory inspector, he can satisfy himself as to sanitary conditions and protection from dangerous machinery in the places where the child will work.

In 1908 the number of factory inspectors was increased from 165 to 200, and it is still thought inadequate. The majority of the male inspectors are assigned, either in charge or as assistants, to definite districts, where their work is controlled by the chief inspector or by one of his supervising assistants. Lady inspectors are usually sent to such portions of the field as require their work, according to the emergencies of the service. Experienced inspectors are detailed to make special investigations when information concerning some particular district or industry is required. In addition, the Government provides special expert inspectors for textile industries, electrical machinery, and dangerous trades, besides a medical inspector. There are also some 70 sanitary inspectors, nearly half of whom are women, whose duties are solely under the Factory and Workshop Act. About 40 mine inspectors, under a chief inspector, enforce prescribed conditions of employment in mines. Over 170 local inspectors are either wholly or partly engaged in enforcing the Shop Hours Act and the law requiring seats for shop assistants.

Most of the male factory inspectors are men who previously to entering this work were practically familiar with manufacturing, while several of the female inspectors have been drawn from the ranks of social workers. Of the men on the staff in 1907, 49 were engineers, 20 had been manufacturers or managers of works, and 20 were scientists or teachers of science or of engineering. Seven were university men, 16 had been transferred from other government departments, 24 had been either workingmen in factories or trade-union officials, and 11 had held clerical positions. The army furnished 2 inspectors and the law 1. Of the lady inspectors 5 had previously been in local sanitary departments.

There is no cooperation, except voluntary, between trade unions and the factory inspectors; but the labor party in Parliament, largely representing these organizations, naturally interests itself especially in the provisions and the administration of the factory laws. The civil-service requirements are said to prevent workingmen from securing appointments as inspectors, or after appointment from advancing to more responsible and better-paid positions. In 1907 among the former workingmen upon the staff the proportion of full inspectors to assistants was only a little over one-ninth the corresponding proportion among members from other callings. The weak point in the administration of the law, however, is not so much in the personnel or in the powers of inspectors as in the inadequate strength of the inspecting force. Omitting domestic workshops, which need as much attention as larger works, in 1906 the field force was able to visit each establishment registered under the act an average of 1.5 times. As some of these visits were made to domestic workshops, the average number of times each factory was inspected was less than this. Moreover, special demands or convenience of opportunity caused two or more visits to be made to many works, while others escaped inspection altogether. Even with the increased force, each inspector available for field work must look after the welfare of nearly 30,000 workers—the population of a city. In Massachusetts, where there are separate inspectors for steam boilers and where local authorities enforce rather more provisions of the law than do the local authorities in Great Britain, there are more then ten times this number of inspectors in proportion to the workers to whom the law applies; and in some other Northern States the proportion seems to be larger than in Great Britain. But in our Southern States as yet there is practically no provision for enforcing by direct inspection the laws recently enacted in regard to woman and child workers. And in the United Kingdom the congestion of population and industries makes a relatively smaller force more adequate than it would be in America.

One proposal in England is to increase the powers and responsibilities of local sanitary inspectors, at the same time making them strictly subordinate in industrial inspection to the factory department, thus leaving the latter's inspectors free to concentrate attention on such matters as dangerous machinery and processes, hours of work, and wages. Some of the labor representatives, on the other hand, favor increasing the central at the expense of local supervision, and for this reason would greatly strengthen the inspecting staff. The uniform administration of the law is rendered more difficult where much is left to local action, and influences are more likely to come into play to prevent the rigid enforcement of some requirements. The general opinion seems to be that the value of the law is in proportion to the number of officers in the field to enforce it, and that its administration is best intrusted, in all main matters, to a single central authority.

The treatment of violations of the act is left to the discretion of inspectors. The application of a large number of special rules to a complicated industry results in many minor or inadvertent violations, which are dismissed with a caution. For an inspector to prosecute every offense detected would in a sense defeat his usefulness; for it would require him to spend so much time in court that he could not visit factories. Generally the cases taken before a magistrate are (*a*) repeated offenses, (*b*) offenses involving a contested point of law, or (*c*) where an example is made of one employer to check a tendency to disregard some provision of the law observed among several employers in the vicinity. Suits are brought in the police court, with the possibility of appeal. Before bringing a suit the inspector secures the authorization of the supervising inspector or the chief inspector, and he prosecutes in his own name and may conduct his case without an attorney.

The number of prosecutions averages about 4,000 a year, with nearly 95 per cent of convictions and voluntary withdrawals. In 1907 the convictions were 4,211 out of 4,474 cases brought into court. The average fine inflicted upon offenders was 19s. 8d. ($4.79). The law fixes minimum and maximum penalties for certain defined offenses and also in some cases a penalty for each day of default in carrying out the provisions of the act. The minimum penalty that may be inflicted is £1 ($4.87) and applies to repeated offenses within 2 years for all classes of offenses except breach of regulations relating to cotton-cloth factories, where the minimum is £5 ($24.33) for the first and £10 ($48.67) for the second offense, and contract or payment contrary to the Truck Act, where it is £10 ($48.67) for the second offense. The maximum penalty rises in some cases to £100 sterling ($486.65). This is the fine for neglecting a regulation by which injury or death is caused, and does not bar civil action by the employee for damages or compensation. For disregarding important health or safety requirements an inspector may secure an order of court closing a factory or workshop until the bad conditions shall have been remedied; but such closing must be ordered only as a precaution against injury to workers, and not as a penalty for violating the act.

PROPOSED AMENDMENTS.

In Great Britain there is now no such opposition to factory legislation as still evidences itself in some parts of America. No employer or representative of employers was heard to criticise the act as a whole, and there was but mild objection to any of its details. Undoubtedly among smaller works and in the sweatshop districts one might encounter struggling proprietors competing with large manufacturers under the disadvantage of insufficient capital and amid uneconomic conditions, who see in the demands for modern sanitation and regulated employment extortions that foreshadow their own ruin. But these people are few and growing fewer, and do not make public opinion outside their class. The great main current of thought and sympathy among the mass of the nation, including both employers and workers, not only favors present regulations but is not averse to extending them.

The present tendency, as indicated by the more recent amendments, is to bring new and quasi-manufacturing industries—such as laundry work—under the law, and greatly to amplify the regulations governing dangerous trades. Apart from the constant agitation to increase the number of inspectors, which has just led to considerable results, there are three chief lines of amendment advocated by those who wish to strengthen the law. One is to carry forward the general movement to shorten hours by reducing the weekly period of factory labor; the second is to abolish half time, thus doing away with what is called in England child labor by making the lowest age of beginners in shops and factories 14 years; and the third, and most important politically and economically, is to regulate sweating by establishing a legal minimum wage. The third proposal would introduce a hitherto unrecognized principle into British factory legislation.

The agitation for shorter hours is not so active as it would be were not labor unions, improved machinery, and the general transformation of industry bringing these about without further assistance from legislation. In many industries and establishments women and children are not at present employed the full hours allowed by law, because better results are obtained by a shorter working day. But during the recent boom in textiles some factories where piecework rates are paid and where employees are not always averse to evading the regulations, there is still "time cribbing," or running the machinery a trifle over the legal time, especially at meal intervals. The present depression will probably stop most of this for the time being, because there is not sufficient work to keep the mills going full hours.

THE HALF-TIME SYSTEM.

In Great Britain the sentiment of the general public and of many employers, and the official attitude of the labor party, are opposed to the labor of children under 14 years of age in factories and workshops, and so to the half-time system. This system grew up in the midst of the compromises that have characterized most factory legislation, and has never been justified by its own merits. On the other hand, some employers and many of the rank and file of workers, especially in Lancashire and in certain other textile districts, favor its retention. The attitude of the working people is based upon the real or assumed need of the children's wages to support the family, and to a less clearly expressed but equally widespread sentiment that what was good enough for the parent is good enough for the child. Employers use the argument that for spinning finer numbers of yarn, and possibly in some other occupations, children acquire the necessary skill only when they begin young. There are a few places, notably the jute mills of Dundee, where the survival of an industry in competition with foreign (in this case Indian) cheap labor is supposed to depend upon the employment of young children. The arguments against half time are the same as those against all child labor, and are reenforced by special considerations. The alternation of factory work and school attendance, particularly when this occurs on the same day, overtaxes most children—and in such a way that the main loss of interest and attention is felt by the school work. The organization and discipline of the schools are embarrassed where some of the pupils attend but one session daily, and this in turn reacts on the welfare of the other pupils. The whole community thereby suffers, and probably the total loss is greater than any possible gain from the children's labor.

Inasmuch as the law permits only those children who have attended school regularly and who have acquired a certain standard of proficiency in school to work half time, stupid and slow children are debarred from this questionable privilege; therefore, the half timers should be mentally as well as physically a picked class. The almost unanimous testimony is that factory life soon removes them from this preferred position. To quote a leading physician of one of England's chief factory cities:

> To every teacher the half timer is an unmitigated nuisance, and his presence in school an intellectual drag and a bad moral influence—the evil atmosphere of the mill very soon affecting him. If educated alongside the ordinary whole-day scholars, the curriculum of the whole school has to be curtailed to suit his possibilities, and wherever possible in large schools separate half-time classes are established, with a view to minimizing the effects of this intellectual handicapping and the insidious moral contamination of the other children. * * * At an examination one poor little fellow who was asked by the inspector to repeat his portion of poetry, rose up but could not proceed, whereupon one of the other boys called out, "Please, sir, he's a half timer."

The half timer is not an isolated phenomenon. In Lancashire, Yorkshire, Cheshire, and Derbyshire something like one-half of all the children go to work in the factories before they are 14 years of age. A prominent social worker, speaking of a personal investigation in this district, says:

> In one town I visited six large council schools, all of which contained an average of from 100 to 150 half timers. Fifty per cent of the children at work, in the upper classes, were half timers; in some schools even more. In one class I found 49, out of 56 girls, half timers—only 7 being present the whole day. In another, the proportion was 36 out of 55; in another, 14 out of 27; in another, 20 out of 40. The children are not all present at the same time, some being engaged in the morning shift, others in the afternoon; consequently continuity of teaching is only secured with difficulty. * * * The teachers say the children lose more than 50 per cent of their education. When they come to school after the morning shift 33 per cent are in a semicomatose condition, quite unable to profit educationally from the lessons put before them, and more often than not they fall asleep in school during the afternoon. This is hardly to be wondered at when we remember that the children are almost entirely employed in the spinning rooms, and in a very hot and highly humid atmosphere. The monotony of the work, the noise, and the smell, all affect the

children prejudicially and make them less responsive intellectually. Morally the effect is also undesirable. They become less inclined to discipline and rougher in manner.

Some of the worst evils of child labor exist in North Ireland, especially in the linen factories of Belfast and vicinity. A lady factory inspector, making a special investigation of conditions in this district, found that illegal employment of children under age was not uncommon, and that children with surgeon's certificates were working at tasks beyond their strength and capacity. Children sometimes worked with certificates that did not belong to them. In Belfast, of 133 half-time children aged 12 years, 88 were in the three lowest grades at school; out of 146 aged 13 years, 89 were in the three lowest grades, and out of 19 aged 14 years, 11 were in the same primary classes. With nominal compulsory education, over 1 child in 6 of those under 14 years, but of school age, could not read or write. However, the half-time law seems to have one good effect in this part of Ireland—some children first begin to attend school regularly when they enter a factory. The act requires that a certificate of attendance for the previous week be filed with the employer every Monday morning, and where the child has failed to be in school fully one-half of the sessions the previous week, except in case of illness, he must not be employed the coming week until the sessions in default are all made up.

The great preponderance of testimony goes to show that half time in factories weakens children physically. The life of the half timer has been vividly pictured, but without essential exaggeration, as follows:

> Every alternate week in the year, rain or sunshine, the children must be wakened at 5 or a little after, in order to arrive at the factory by 6 o'clock, or in some instances at half past 6. It means that for six months of the year they must leave home and walk often a mile or more through the raw mist, the cold, and the darkness so typical of a north of England town. It means that they will stay in the factory until 12 or half past 12, with half an hour's interval for breakfast, a breakfast composed of bread and butter and tea, without milk, taken at the loom side. It means that at 12 or half past, they run home to a midday meal, the more tidy and respectable to change their oil-sodden, ill-smelling factory clothes for neater garments, to snatch a hurried meal and to be in school by 2 o'clock. After a long morning, begun when most of us are asleep, at lugging bobbins, doffing bobbins, laying on bobbins in the spinning rooms, or tenting in the weaving sheds, can you wonder that the children find it hard to concentrate their minds on the mysteries of arithmetic and grammar?

The next week the child works in the afternoon instead of the morning, and probably comes to his lessons with somewhat fresher interest, but by no means on an equal footing with his more fortunate schoolmates. But the physical effect of overfatigue upon growing children, combined usually with improper diet, is here only suggested. This is but one of the many ill influences depressing the physique of industrial populations, yet it is one of the most important. The half-time system falls more heavily upon the children of these factory operatives, precisely because they start in life with a physical handicap. Following are some figures taken in Liverpool, which is not a factory town, showing the average height and weight of school children of different ages, in schools in a wealthy and in a poor district, respectively:

AVERAGE HEIGHT AND WEIGHT OF SCHOOL CHILDREN IN LIVERPOOL, AT SPECIFIED AGES, BY LOCATION OF SCHOOL.

Location of school.	Seven years old.		Eleven years old.		Fourteen years old.	
	Height (feet and inches).	Weight (pounds).	Height (feet and inches).	Weight (pounds).	Height (feet and inches).	Weight (pounds).
Wealthy district	3 11¾	49	4 7½	70	5 1¾	94½
Poor district	3 8	43	4 1¾	53	4 7	71

In the original tables statistics from schools in intermediate districts are given, which show a regular gradation in the height and weight of children of the same ages from those of the wealthiest to those of the poorest class. A similar investigation in Dundee, where there is a large factory population, gave equally striking results. A much more extensive investigation in England showed that at 13 years of age the average height of the boy from a well-to-do home was 3.17 inches above that of the boy who worked, and the average difference in their respective weights was 10.33 pounds. This difference continued to increase until at 16 years of age the nonworking boy had an average advantage over the working boy of 3.47 inches in height and 19.68 pounds in weight. Differences in average chest measurement show the same variation. These physical handicaps of the poor children are not solely caused by early labor. They are also to be accounted for in a large degree by food, housing, prenatal conditions, and to care during infancy. Nevertheless the evil done by too early and too arduous employment accentuates these handicaps. Medical officers report:

> Factory children of factory parents, urban and suburban, compare unfavorably with children in nonfactory districts, urban and rural, and the rate of mortality, particularly infant mortality, is unduly high in factory districts.

A factory inspector of long experience says:

> Employment of this character [in textile mills], especially if carried on in high temperatures, rarely fosters growth or development;

the stunted child elongates slightly in time, but remains very thin, loses color, the muscles remain small, especially those of the upper limbs, the legs are inclined to become bowed, more particularly if heavy weights have to be habitually carried, the arch of the foot flattens, and the teeth decay rapidly. * * * The girls exhibit the same shortness of stature, the same miserable development, and they possess the same sallow cheeks and carious teeth. I have also observed that at an age when girls brought up under wholesome conditions usually possess a luxuriant growth of hair, these factory girls have a scanty crop, that when tied back is simply a wisp or "rat's tail."

In Bradford 52 head teachers were recently interrogated by a city medical officer as to the physical effect of half time upon school children:

Thirty-seven declared that the system was most injurious to the child's physique. They considered that the lack of adequate sleep, the constant pressure to work quickly, the carrying of big loads of bobbins about the factory, the morning tea without milk, the heat of the spinning room, the lack of play all worked harm.

A factory surgeon of 25 years' experience reports:

The medium average of Lancashire factory children is not equal to the average elsewhere. * * * Even strong children do not escape scot-free, for insidious diseases settle in their lungs, the blood is squeezed out of their faces, their limbs lose their youthful straightness and vigor. But the delicate children have no chance at all, for that which injures the healthy kills the frail quickly. * * * The promising child of 10 degenerates into the lean and sallow young person of 13; and this process is continued until a whole population becomes stunted.

The percentage of accidents among half-time employees is said to be higher than among adults or young persons, indicating probably the influence of fatigue as much as lack of familiarity with machinery.

The argument that the wages of half timers are a necessary aid in the support of their families disregards the influence of the competition of these half timers in lowering the wage of adult workers, making the latter less able to provide for a family, and also the second direct influence of this system, that of depressing the wages of men engaged in the ordinary occupations by throwing into the labor market a large number of boy half timers who are too old to remain in the mills but are not qualified to undertake any skilled occupation. A factory official in a half-time district said: "There is no work for the boys after they are 16. Most of them become casual laborers." It will be shown later that men's wages are generally lowest in half time centers, though in some cases women's wages are higher than elsewhere. Speaking of conditions in Dundee, where there is still considerable half time, though not nearly so much as in some of the English and Irish cities, a local investigating committee says:

> The demand for men's labor would have to be more than three times as large in order to provide work for all these lads, and a number whose parents have sent them to mill or factory as children are turned adrift at the age of 17 or 18. A few of them become skilled workers in other trades, but a mill or factory boy is handicapped in his search for work. If he is not too old to become an apprentice to some trade he may earn half or less than half his accustomed wage. It would appear, moreover, that employers in nontextile trades in Dundee as a rule prefer to employ lads who have not spent a portion of their childhood in the jute works, on the ground that they make steadier workers and are in better physical condition. Some boys on leaving the mill or factory become laborers in other trades; others enter the army, and after serving their term return to the city, seeking work as unskilled laborers; a number—as may be inferred by the fact that there are about 3 women to 2 men in Dundee between the ages of 20 and 45—leave the town to seek work elsewhere, while others live from hand to mouth as casual laborers, or join the ranks of the permanently unemployed. The outlook for boys who remain in the mills and factories is not very favorable, as only about 1 in 12 rises to be an overseer or tenter, and the average wages for men's work in the mill or factory (excluding mechanics) are under 15s. [$3.65] in 5 processes, under £1 [$4.87] in 8 processes, and £1 [$4.87] or over in 5 processes.

Moreover, the statement that the earnings of the half timers are necessary to help support the family does not in the main accord with the facts. Doubtless there are some instances where the wages of one or two children keep a widowed or invalid parent from poor relief; but in Great Britain the child workers in factories and mills and those employed out of school hours (as will be shown later) do not as a rule come from the most destitute classes. In Belfast it was discovered that a considerable number of the half timers in the linen mills came from families where parents earn from $12 to $15 a week. Since laborers support families on half this sum, it is not necessity alone that drives these little people into the mills. Not infrequently, it has been found, the family drink bill exceeds the children's earnings. Another consideration pointing to the same conclusion is that in districts where (either on account of local regulations or because of custom) half time does not exist the condition of the working classes is quite as good as where half time is common; and this occurs where the dominant industries are sufficiently similar to show that difference in trade is not a decisive factor in the question. While Oldham, Bolton, Blackburn, and Bradford throng with half timers, Warrington, Widnes, Bootle, and the great cities of Manchester, Leeds, and London have none. A factory inspector intimately acquainted with living conditions in the textile districts said of the system: "It is not so much necessity as habit;" and truly custom seems more important than need in determining whether or not children under 14 years shall work in the mills.

The argument of some employers that children must be trained from an early age to acquire the skill necessary for fine spinning and other deft branches of textile work is scouted with scorn by well-informed social workers, and receives only a noncommittal smile from some manufacturers. It may well be doubted whether the dexterity mentioned can be acquired only between the years of 12 and 14. The finest yarns spun in the United States are manufactured where the law does not permit children under 14 years to enter a factory, and where there is no hereditary operative class. Most of the textile workers in New England are immigrants from countries where there is little industrial development, who do not take up this work until after their arrival, and generally not until they are approaching maturity. While the proportion of fine work is less in America than in Great Britain, the difference (especially between England and New England) is not great enough to invalidate in this respect a comparison between the two countries. In fact, the frank statement was made on one occasion that half time affected the parents more than it did the mills.

The defenders of the half-time system say that the children are eager to get into the mills and to become wage-earners and partly self-supporting. This is true, and is due to the ideals of manhood and womanhood placed before the children in their homes and by their street associations. The association with older people in employment, the sense of being with the crowd, the freedom from what they regard as the juvenile restraints of school life, all appeal to most children from the factory classes. Also, in the half-time districts, successful business men are often pointed out with the remark that they began as half timers. And there are fairly numerous examples in England of men and women who have survived the hardships of an arduous childhood in the mills to attain success in business, though few—like Livingstone—rise to higher spheres of accomplishment; yet it could hardly be said that these people owe their success to their mill experience.

The half-time system increases the difficulty of administering the factory law and adds to the ease with which it may be evaded. It makes work for both employers and officials. Those who by satisfying the educational requirements become full timers at 13 years, add still more to the complexity of the situation. A mere casual inspection of a workroom full of children affords no clue to the status of the different individuals. In some places where there is a great demand for young labor the proportion of full timers under 14 years is large. The Nottingham lace district is an example of this. The certain prospect of remunerative work, combined with good schools, may afford the incentive and opportunity for obtaining full-time certificates early; but some well-informed people in England consider that the present law, by allowing too much discretion where there is the maximum pressure of self-interest, permits local educational authorities in some cases to encourage moral, if not technical, evasions of its intention.

An interesting incidental effect of the prevalence of half-time textile labor is that in some districts its example appears to encourage the employment of children in industries that elsewhere are conducted with older workers. An illustration of this is found at Bradford. There were, according to the most recent figures, considerably over 5,000 half timers in the city, constituting more than 10 per cent of the total school enrollment. Spinning occupied 1,725 boys and 1,495 girls, and more than 1,300 children were employed in other textile work, principally as doffers, bobbin layers, and peggers. But there were over 500 half timers, or about 10 per cent of the whole number, in other occupations, in some of which children elsewhere do not usually engage. A factory inspector found 5 children 12 years old attending an ironing and calendering machine in a steam laundry. There were other half timers working in the same establishment. The employer said that unless he caught the children young they went into the mills and remained until they were too old to become skilled laundry workers.

Bradford and the neighboring city of Leeds illustrate the irregular distribution of half-time labor in Great Britain. The cities are some 10 miles apart and are of about equal size. Leeds is a great woolen and clothing manufacturing center, while its sister city is a seat of the fine woolen industry. Yet in Leeds there is no half time. Except in Dundee, there is practically no half time in Scotland, where more interest is taken in universal education than elsewhere in Great Britain. Even in Dundee half time is decreasing in spite of the demand for cheap labor, so that now only 400 children are employed. But in Bradford and in Lancashire half timers have recently been upon the increase, the number in Bradford rising from 4,970 in April, 1906, to 5,130 a year later. In both these districts manufacturers and factory officials ascribed the greater employment of children to the prevailing prosperity in the cotton and woolen trade which created an extraordinary demand for labor. This is in peculiar contrast to the testimony of manufacturers in the textile districts of America in the summer of 1907, that the decrease of child labor was due to the great prosperity and high wages, which enabled parents to keep their children out of the factory and send them to school.

This recent increase in child labor, contrary to the general tendency in Great Britain during the past century, has occasioned much comment and agitation against the half-time system. The returns made by the board of education for 1906–7 show the number of pupils enrolled in the schools who worked part time, for the three preceding years, to have been as follows:

1903–4	78,876
1904–5	80,328
1905–6	82,328

According to the Annual Report of the Chief Inspector of Factories and Workshops for 1907, 45,555 children were examined for certificates exempting them from full school attendance in order to work in factories. Of these, 24,414 were in Lancashire and 11,597 in Yorkshire.

All the influences affecting the distribution of this kind of labor are difficult to determine. Apart from the nature of the dominant industry, the extent to which industries are diversified seems to have something to do with the question. At Leeds and Bradford it was commonly observed that the former city was able to dispense with child labor because it had more different occupations for adults, so that men could find employment at good wages. Leeds has large tanneries and machine shops, and is one of the chief centers in England for the manufacture of woolen clothing, while Bradford is almost exclusively a spinning town. Manchester, with its varied industries, has few, if any, half timers, while Blackburn has over 4,000, Bolton over 3,000, and Halifax, Preston, and Oldham each over 2,000. These are almost exclusively textile towns. However, Paisley, in Scotland, which is preeminently a textile town, has no half timers; but Belfast, in Ireland, with its diversified industries and great shipyards, has many of them.

Although there nas been a temporary increase in child employment in some districts, the general tendency, quite apart from legislative influence, is toward its restriction. But this tendency is not continuously effective, so there are temporary rises in what is upon the whole a rapidly descending curve. In England and Wales the per cent of all the children 10 and under 15 years old returned in the census schedules of 1861, 1881, and 1901 as occupied was as follows:

PER CENT OF CHILDREN IN ENGLAND AND WALES 10 AND UNDER 15 YEARS OF AGE ENGAGED IN GAINFUL OCCUPATIONS, AT CENSUS YEARS 1861, 1881, AND 1901.

Year.	Per cent of children 10 and under 15 years of age returned as occupied.	
	Males.	Females.
1861	36.9	20.2
1881	22.9	15.1
1901	21.9	12.0

In 1891 special industrial conditions caused the proportion of boys employed to rise to 26 per cent, or considerably higher than 10 years previously, and the proportion of girls to rise to 16.3, also higher than at the end of the previous decade.

The number of half timers reported in England and Wales in 1890–91 was 173,040, and in 1900–1901 it was 74,468. This decrease was in large part due to restrictive legislation. Between 1895 and 1901 the number of half timers in the cotton trade decreased from 31,570 to 20,953; in the woolen trade, from 13,435 to 7,475; in flax and hemp, from 8,732 to 7,125; in all textile industries, from 64,357 to 43,636. The number of half timers, therefore, fell off 32.2 per cent, while the number of adults employed in this group of industries decreased but 2 per cent. Only about one-half of these child workers are employed in factories, workshops, and laundries under the inspection of the factory department. Mines account for about 10,000, and stores and other commercial establishments, offices, and the messenger service for most of the remainder. In March, 1908, the half timers subject to factory inspection numbered, in the United Kingdom, 37,625, of whom 25,345 were in Lancashire and Yorkshire.

That the tendency to dispense with child workers is not due entirely to legislation is indicated by the fact that while the number of adult textile operatives decreased 2 per cent during the 5 years ending with 1901 the number of young persons between 14 and 18 years of age engaged in these industries decreased nearly 10 per cent. With this latter decrease the law had nothing to do. Probably improvements in machinery and factory organization, and perhaps a better appreciation of the conditions of economic production, are convincing employers that youthful labor is no longer the most profitable. It is not uncommon to be told by a manufacturer that he can not afford to employ half timers. Other reasons, and it is to be hoped the principal reasons, why fewer children go into the mills than formerly are that the sentiment of parents is changing and that working people are better able than they were to get along without the wages of their children.

Nearly all the factory inspectors interviewed in districts where half time is common suggested its gradual abolition as the next desirable amendment to the factory law. Many thought the minimum half-time age limit should be raised to 13 years and no full-time certificates issued to children under 14. This would prepare the way for the complete abolition of the system a few years later. Educational officers were (so far as interviewed) unanimously and emphatically in favor of sweeping the whole institution out of existence as soon as possible. Labor leaders oppose half time, but admit that it is necessary to educate the rank and file of their followers up to their position. The newspapers occasionally contain letters, apparently from operatives and those who reflect their sentiment, opposing the further restriction of child labor. One such letter closes with the statement: "Of 21,000 members of our Operative Cotton Spinners' Union, of Lancashire and adjoining counties, fully 98 per cent began work as half timers." But the feeling of a little gathering of workingmen in a textile city was not responsive to this argument, one man saying that the masters sent their children to the schools and not to the factories, and that he thought his children should have the same privilege. In Preston the unions were said officially to oppose half time (though this could not be verified) and educated working people opposed it; but the sentiment in its favor among the mass of the operatives was strong. Still this sentiment is said to be changing rapidly.

Child labor in mines has fewer defenders among the workers. In the coal mines alone there are between 8,000 and 9,000 boys under 14 years of age, two-thirds of whom work underground. A few girls are employed above ground, but their number is inappreciable. Of two neighboring and competing coal districts one may employ children and the other none. The character of the coal, as clean or shale-mixed, might affect differently in different places the need of cheap labor at the picking tables; but it is difficult to see how the general physical conditions of adjacent districts can influence so variously the necessity for child workers underground. These are mostly drivers and trap boys. Mine employment, therefore, presents features that substantiate the surmise made in case of factories, that child labor is more a matter of custom than of economic convenience. The employment underground of children under 14 years is one of the points against which social reformers are directing their attacks. In the Cardiff field boys prefer working in mines to factory employment because of the higher wages. In that district there are 1,347 boys working underground. At Newcastle there are only about 350. In the Midland district there are 1,027, and in Durham 1,084. Durham has about as many adult coal miners as Scotland, but in Scotland only 100 boys work underground.

Incidentally it may be remarked in connection with coal mines that they employ about 6,000 women and girls in Great Britain, all of whom work above ground. Some of these are office and lamp cleaners, telephone attendants, and clerks; but a very large majority work at the picking tables or endless belts over which coal is carried to be cleaned from shale, and some load and unload tubs from the carriers. Though this labor is discountenanced by public opinion, it is probably a field of employment preferable in some ways to work in a factory or shop. One mine inspector reports that "both as regards health and morals they [the coal pickers] will compare favorably with any other class of female workers." A woman trade-union secretary made the same statement. But it is proposed in a projected bill to forbid this labor altogether, thus completely excluding women, who are already forbidden to work underground, from coal mines.

Returning for a moment to the question of child labor, though there is now no bill before Parliament radically extending the present restrictions, the combined influence of law and industrial progress bids fair within a very few years to make employment under 14 years practically unknown in factories, and to lessen employment immediately above that age.

EMPLOYMENT OF CHILDREN OUTSIDE OF FACTORIES AND WORKSHOPS.

Before considering the proposed minimum wage amendments to the Factory Act, which affect chiefly women, it may be well to depart from the discussion of that statute long enough to review a second law relating particularly to child labor, the Employment of Children Act of 1903. This was passed in response to an agitation, extending over several years, for the regulation of children's work outside of school hours and of trading by children on the streets. Few, if any, of these children were protected by the factory and mines laws. A previous statute for the prevention of cruelty to children had restricted their employment in dangerous or immoral occupations. In 1899 the educational department obtained an incomplete return showing the employment of children in England and Wales outside of school hours, which indicated that, of a total registration of something over five and a half million children under 14 years of age, 144,000 worked for compensation when not in school. In the occupations followed principally by boys, 76,000 were employed in shops and offices, 26,000 sold newspapers or hawked goods, over 10,000 did odd jobs, and 6,000 worked on farms. Of the girls, some 20,000 were in domestic service and 4,000 did sewing. Rather over a third of these children worked more than 20 hours weekly outside of school; more than a fourth of them were under 10 years of age; and the average earnings of those of all ages did not much exceed 25 cents a week. The result was that many children were overworked, to the injury of their health, and their progress in school was hindered. But the opinion of many teachers was that a limited amount of outdoor employment did not harm the children.

The distribution of this form of child labor was uneven, a much larger proportion of the public-school pupils being employed in some city and some country districts than in other city and other country districts. In London, of 480,000 pupils over 7 years old, 30,800 were wage-earners, and some 12,000 worked 20 hours a week in addition to 27½ hours in school.

These returns were admitted to be incomplete when published, and subsequent investigation indicated that they fell very far short of reporting the full number of children engaged in outside work. In 1901 an interdepartmental committee, representing not only the education office but also the authorities regulating child labor in industries, reported that in England and Wales nearly a quarter of a million children were probably at that time working outside of school hours in occupations not subject to inspection by the central Government; and that 200,000 represented a fair average of the number attending school full time and working for wages, for their board, or for other compensation outside these hours. The committee recommended that powers be given local authorities to make by-laws regulating (1) the hours between which school children might be employed; (2) the age at which employment might begin; and (3) the number of daily and weekly hours beyond which they might not work. These recommendations were embodied in the act of 1903.

The law places general restrictions upon the employment of children outside of school and gives authority to local governing bodies to increase these restrictions. The whole administration of the act is left to local supervision, the factory and mines inspectors not intervening in any way for its enforcement. But the local by-laws made under this authority must be confirmed by the secretary of state before they become valid. The parliamentary restrictions upon the employment of children outside of school are:

(1) A child shall not be employed between the hours of 9 in the evening and 6 in the morning: *Provided*, That any local authority may, by by-law, vary these hours either generally or for any specified occupation.

(2) A child under the age of 11 years shall not be employed in street trading.

(3) No child who is employed half time under the Factory and Workshop Act, 1901, shall be employed in any other occupation.

(4) A child shall not be employed to lift, carry, or move anything so heavy as to be likely to cause injury to the child.

(5) A child shall not be employed in any occupation likely to be injurious to his life, limb, health, or education, regard being had to his physical condition.

(6) If the local authority send to the employer of any child a certificate signed by a registered medical practitioner that the lifting, carrying, or moving of any specified weight is likely to cause injury to the child, or that any specified occupation is likely to be injurious to the life, limb, health, or education of the child, the certificate shall be admissible as evidence in any subsequent proceedings against the employer in respect of the employment of the child.

Up to the end of February, 1908, 69 local authorities, 7 urban districts, and 3 counties, including the city of London, had made by-laws under this act; but in 34 instances these regulations deal only with street trading. The London County Council rules, which are among the more recent, provide that children under 14 years shall not be employed in industrial work (such as assisting at a trade followed in their homes) on school days, except between 5 and 8 p. m., or on other week days except between 9 and 12 a. m. and 5 and 8 p. m.; and they shall not be employed on Sunday. Children attending school full time shall not be employed at any occupation between 8 a. m and 5 p. m., or before 6 a. m. or after 8.30 p. m. This shortens by a half hour in the evening the time of employment permitted by the general act. Boys may not be employed where any intoxicants, except those in sealed vessels, are sold, and boys under 12 shall not be employed in barber shops. If a school is open only 2 days or less during any week, pupils may be employed not to exceed 30 hours that week. Several cities do not allow the employment of boys under 13 years of age in barber shops; and Banbury, Brighton, and Sheffield have prohibited altogether the employment of boys in such shops. Some local regulations specifically provide against young children being employed to deliver milk at very early hours or to deliver messages late at night.

This kind of child labor presents several aspects and problems similar to those noticed in connection with half-time employment in factories. The London medical officers have arrived at the conclusion that as a rule it is the children above the average in physique and mental ability who go to work. "The evil effects are shown later, when the best capital of the nation has been squandered in premature wage-earning." As in the case of half timers, too, investigation indicates that family necessity is not the determining factor in deciding the extent of this kind of child employment. A study of the incomes of 802 families in London whose children were employed out of school hours showed that for only 143 families were the weekly earnings under £1 ($4.87), while in 343 families they ranged from £1 to £1 10s. ($4.87 to $7.30), and in 316 families were £1 10s. ($7.30) and over. Small as these earnings are, they are above those of the poorest families in that city. Outside of London a partial investigation of typical districts indicated that of 714 cases more than half had an income of £1 10s. ($7.30), while in 258 cases it was over £1 15s. ($8.52).

Probably the worst conditions are found in large cities, and those most detrimental to the health of the children are in industrial work. Nearly 17,000 children attending school full time have been found to be engaged in piecework trades in their homes outside of school hours. These trades include making paper bags, brushes, baskets, and match boxes, sorting rags, and linking and carding hooks and eyes. Over 4,000 little girls—for this applies only to children under 14—are engaged in making dresses, shirts, mantles, belts, and similar articles. In the East End of London children are unable to take advantage of the fresh-air fund outings to the country, because their parents want their labor during vacation. Little girls of from 6 to 10 years of age help their mothers make hairpin boxes before and after school; a little girl of 13 was found who did trouser finishing. In Nottingham an investigator was told by teachers that children of from 5 to 11 years of age were employed at home during the dinner hour. "A little girl of 8, still in her hat and jacket, was at 1.30 drawing lace for her mother; she had not had dinner, and probably would eat it on her way back to school."

Quite apart from temporary overstrain incidental to such children's work, especially where they have to carry burdens, and even apart from the physical fatigue of abnormal labor during the growing years, the constant application to routine occupations during a time when the child's perceptive faculties are most active, and are evidently intended by nature to receive the greatest variety of impressions, is mentally deadening. The total effect upon school progress is very bad. A London head teacher investigated the results of such work upon 103 boys. Although the usual record of such children before going to work was above the average, 54 of these were reported "dull" or "very dull" or as behind in their work or recently demoted from a more advanced class. In 1905 one of the London physicians made an examination of 330 similar cases, finding that 209 showed retardation in school work, 86 being one year, 83 two years, and 3 four years behind the grades corresponding to their age. These results may not be due to the effects of overwork alone. They are doubtless accounted for in part by poor diet and other home conditions. But the testimony seems to show that the great setback in the child's school progress does not come until the child is employed outside of school hours, and that therefore this is the immediate and probably the principal direct cause of its mental retrogression.

That a child of average strength can not attend school full time and work outside for several hours a week without suffering in health is also a fact based upon something more than common opinion. An investigation of 340 working boys, from 14 schools, representing an attendance of 3,864 children, showed that of those working not to exceed 20 hours per week 50 per cent showed fatigue signs, 34 per cent anæmia, 28 per cent severe nerve signs, 15 per cent deformities, and 11 per cent heart signs. Of those working 20 to 30 hours outside of school, 81 per cent showed fatigue signs, 47 per cent anæmia, 44 per cent nerve signs, and 21 per cent deformities. Of those working over

30 hours, 83 per cent showed fatigue signs, 45 per cent anæmia, 50 per cent nerve signs, 22 per cent deformities, and 20 per cent severe heart signs. Industrial deformities are here referred to. Of the shop boys carrying heavy weights, 26 per cent showed deformities and 21 per cent heart disease. Girls carrying heavy weights and employed in minding babies suffer from lateral curvature of the spine and flat-footedness. In another public school of 103 boys who worked outside school hours, only 30 per cent were of normal physique and health and showed no ill effects from their labor.

Though there are no statistics showing the number of children working outside of school hours since the Employment of Children Act was passed, the indications are that the number is not decreasing. It was noted that even the employment of children in factories, where the influence not only of legislation but also of mechanical improvement and perfected organization is to displace child labor, has risen temporarily since 1903. But in case of outwork children the law is not to the same extent supported by the progress of industry. The trades followed by these little workers are essentially unprogressive. The demand for their labor may remain stationary or even increase for an indefinite period. We might therefore anticipate what recent inquiries have confirmed, that the proportion of school children attending classes full time and working for wages has not diminished. An investigation of a few typical London schools shows that in some places as high as 13 per cent of the pupils enrolled are employed outside. Still the effect of the law has been felt in at least two ways, according to recent testimony, (1) the number of school children working for small tradesmen has decreased, many of the children having been displaced by boys who have left school and who work full time, and (2) the number of school children employed as house servants is now less, the children having been replaced by girls who have left school and who work full time as domestic servants.

STREET TRADING BY CHILDREN.

Street trading by children during school hours has been illegal in Great Britain since compulsory education was adopted; but trading on the streets during school hours by children over 14 years and by younger children outside of those hours, was first regulated by Parliament in the act of 1903. The educational return of 1899 had shown 17,617 school children thus engaged, and the report of the interdepartmental committee 2 years later estimated the number—for England and Wales alone—at 25,000. Before 1903 most English cities had but limited power to deal with this subject, though as early as 1884 Liverpool seized upon a general clause in the corporation act to issue a by-law forbidding children under 9 years old to trade on the street, and children under 13 years to do so after 9 p. m. in the summer and 7 p. m. in the winter. In 1899 Parliament gave this city special authority to regulate further this kind of traffic. Because it is a large seaport Liverpool has an unusually numerous waif and semi-homeless child population, many of whom pick up a precarious living by selling newspapers, matches, flowers, and other small articles. But the problem is not peculiar to that city. In 1905 a census of street traders in Leeds showed the following numbers of children under 16 years old trading on the street: Selling newspapers, 753 boys and 6 girls; selling matches, 24 boys and 10 girls; selling vegetables, 16 boys and 1 girl; selling fruit, 9 boys and 2 girls; selling miscellaneous articles, 46 boys and 15 girls.

From the point of view of immediate earnings some of these children are not unfortunate as compared with other young workers. Newsboys especially often make from $2 to $4 a week. In the social esteem of the street venders themselves match sellers are said to occupy the lowest place, but this distinction is not necessarily based upon comparative earnings.

The evil results of street trading are too well known to need more than summary enumeration. These children furnish a very large proportion of recruits to the criminal population. Those who do not graduate into crime form a liking for the petty excitements of the street and a distaste for regular employment. They lack skill and perseverance, shun the monotony of a permanent job, and as they grow older either follow itinerant and questionable trades or become ill-paid and inefficient casual laborers. Therefore these young people are a source of waste to society rather than of profit. Finally—and this seems to be curiously prominent in the minds of many respectable city residents—swarms of half-fed, half-clothed, and dirty children on the streets, importuning passers-by, are as offensive to delicate people as unswept pavements and malodorous sewers. During the investigations preceding the passage of the act of 1903 it was shown that in Birmingham out of 713 children found selling in the streets during six months 458, or nearly two-thirds, had been prosecuted during that period for various offenses. The number charged with felony was 115, of which 49 charges were against boys and 4 against girls under 14 years of age, while there were 185 charges of gambling, all against boys. A city medical officer testified:

> Street trading has a pernicious effect on the boys engaged in it. There is, first, the evil physical effect of excessive fatigue during the years of growth. This is more marked in street trading than in employment under other by-laws of this act (the Employment of Children Act). The ulterior consequences are even more serious. The children employed as street traders are brought into contact with the adult class of street traders, their moral standard is endangered, and

they are apt to drift into the large class of those who never have any other than casual employment throughout their lives.

Liverpool, under the additional authority given by Parliament in 1899, began to license children trading on the streets, restricted further the time and the ages at which children could follow this vocation, and devised a system by which private philanthropy and public supervision cooperate to keep these children properly clothed. Other cities soon applied for special legislation to enable them to follow Liverpool's example, and the final result was the act of 1903.

The general provisions of the law, in addition to the clause quoted above forbidding children under 11 years old to sell newspapers or other articles on the streets, are as follows:

> Any local authority may make by-laws with respect to street trading by persons under the age of 16, and may by such by-laws—
>
> (a) Prohibit such street trading except subject to such conditions as to age, sex, or otherwise as may be specified in the by-law or subject to the holding of a license to trade to be granted by the local authority;
>
> (b) Regulate the conditions on which such licenses may be granted, suspended, and revoked;
>
> (c) Determine the days and hours during which, and the places at which, such street trading may be carried on;
>
> (d) Require such street traders to wear badges;
>
> (e) Regulate generally the conduct of such street traders: Provided as follows:
>
> (1) The grant of a license or the right to trade shall not be made subject to any conditions having reference to the poverty or general bad character of the person applying for a license or claiming to trade;
>
> (2) The local authority in making by-laws under this section shall have special regard to the desirability of preventing the employment of girls under 16 in streets or public places.

The essential requirement of the by-laws enacted under this provision by the local authorities is that children trading in the street shall hold a license from the city. The license is indicated by a badge or belt, which is usually of one color for children under school age and of another color for children above that age, and this badge must be kept prominently in sight while the child is on the street. Children are required to be decently clothed and orderly, and are not allowed, either in pursuit of business or to deliver goods, to enter places of public entertainment or where intoxicating liquors are sold. The minimum age at which children are granted licenses varies in different places, but for boys it is usually 11 or 12 years, and for girls it rises from 11 or 12 up to 16. The London County Council does not allow girls under 16 to trade on the streets unless accompanied by a parent or guardian. The London rules, which are fairly representative of those in other large cities, limit the hours of street trading for children between 11 and 14 years old to one hour in the morning—from 7 to 8—and to 3 hours in the evening—from 5 to 8. There is the single exception that during the summer months a child who attends a street stall under the immediate direction and control of an adult may work as late as 9 p. m. Two towns, Burnley and Hornsey, have forbidden altogether street trading by girls under 16 years, and though the by-laws of the following cities do not expressly forbid it, no licenses are issued to girls by the officers at Banbury, Crewe, Eastbourne, Hove, Newport, Norwich, and Stretford. In Scotland girls are generally prohibited to sell goods on the streets until they are 16 years old.

The administration of the law is made as simple as possible. Its execution is intrusted to a division of the police office, or watch committee, known usually as the "street trading department." This is in charge of a special officer with his assistants, who issues licenses, enforces the rules under which they are granted, and acts as public guardian of the children under his supervision. A few qualified policemen, generally plain-clothes men, who are specially assigned for this purpose, keep track of the children on the streets and even to some extent in their homes. A successful officer generally knows by their first names all the street trading children on his beat and cultivates friendly relations with them, so the regulations are applied as informally as is compatible with their observance. To quote from a report of the head constable of Liverpool:

> In the performance of these duties the constable is building up a knowledge of the youth in his particular district, and is teaching both them and himself that a policeman's first duty is the prevention of crime, and that there is no better way of doing it than by helping the young to keep out of temptation.

In 1907 the 11 officers detailed for this work in Liverpool made 37,000 visits to homes, where they became "almost as friends of the family, and advise, with the sanction of the law behind their advice."

When a child wishes to sell goods on the street he tells a policeman or his teacher, or any other responsible person, that he wants a license, and generally through the aid of such person procures the proper application form and is assisted to fill it out, after which the form is filed with the department. This form must be indorsed by the parent or guardian of the child, if it has any; and this requirement alone prevents many newsboys and would-be juvenile vagrants from deserting their homes and living in warehouses and alleys. When the application is received an officer visits the boy's home and reports to headquarters the character and circumstances of the boy and his parents. An inquiry blank is also sent to the school the child attends. If the reports are satisfactory, the boy receives his belt or badge, usually from a member of the committee, and has explained to him orally under what conditions he receives it and will be allowed to retain it.

In some cities, though this has not been made general by the act of 1903, provision is made that the boy shall be decently clothed. In Liverpool this is done through an organization called the "Police Aided Association for Clothing the Destitute Children of the City," a voluntary society founded about 13 years ago, whose activities are not confined exclusively to street traders. Though the society is a private one, and is supported by free-will subscriptions, it bestows its charity subject to the advice and under the supervision of the police department. If a child on receiving its license is not decently clothed, and the parents are clearly unable to provide suitable clothing for it, the street trading committee supplies him with a suit of clothes and boots at the expense of the police aided society, and charges him a penny a day until they are paid for. The child must wear these clothes when trading, and, by reason of the fact that the clothing is so marked that it can not be sold or pawned, the child is protected from being despoiled by dissipated parents. For some years after the system was started the cost of the clothing supplied annually increased, but the proportion of that cost repaid by the children or their parents rose from 32 per cent in 1903 to 93 per cent in 1907. The latter year the demand upon the department for clothing fell off some, the number of children so aided decreasing from 301 to 273 and the cost of clothing from £90 5s. 6d. ($439.32) to £72 8s. ($352.33). Liverpool has rather unique authority, under its special legislation, by which street traders found to be living in vicious homes may be placed in lodgings approved by the department and their expenses partly or wholly provided for from public funds.

The supervision of the children continues throughout their license-holding period, and efforts are made, both through the friendly advice and assistance of the officers and by private societies, to get them into permanent positions, where they will receive some training for a better career than itinerant vending. This has been so far successful in some places that in 1907 the Bradford watch committee was able to report that out of the total children licensed when the law went into operation—nearly 600—only 22 still made street trading their sole occupation.

The license itself is distinct from the badge and contains in simple language the rules which the child is expected to observe. The following are the provisions of the Glasgow license, which do not differ materially from those of Liverpool, Manchester, and other British cities:

CONDITIONS OF LICENSE.

You must not break any of the by-laws.

The badge does not belong to you, but is only lent to you to show that you hold a license to trade in the streets. You will only be allowed to keep it so long as you are licensed and observe these conditions.

It must be given up to the police whenever required, or when you stop trading, or when your license has expired.

You will not need it after you are 16 years of age.

It must not be sold or pawned or lent to anyone else, and you must not wear any other.

You must always keep it clean, and wear it when engaged in the streets.

It must be worn on the arm with the lettering uppermost, and must not be covered in any way.

If any person asks for the number of your badge you must always show it.

You must always be clean in person and clothing.

If a policeman tells you to move on, you must do so at once.

If you are under 14 years of age you must not trade in the streets or other places between 9 o'clock forenoon and 4 o'clock afternoon, except on Saturdays and holidays; or after 7 o'clock at night from 1st October till 31st March. For the rest of the year you must not trade after 9 o'clock at night.

If between the age of 14 and 16 years you may trade all day, but not after 9 o'clock at night.

You must not damage your license or lend it to another child or other person.

You must produce it when required.

If you are convicted before the court for any offense, or break these conditions, you may lose your license, and you will not be allowed to trade in the streets.

You must not trade in the streets when there is any infectious disease in your home.

If you change your home you must go at once to the central police office and report it.

You are strictly forbidden—

(a) To obstruct any person or cause any annoyance;

(b) To impose or attempt to impose on any person;

(c) To shout to the annoyance of any person;

(d) To continue shouting when asked by any constable to stop doing so;

(e) To sell any indecent book, paper, print, picture, photograph, or article;

(f) To write or draw anything indecent on the pavement or on the walls of buildings;

(g) To sing or recite anything indecent, or to use bad language;

(h) To fight or quarrel with other boys or girls;

(i) To play football or any other game on the streets;

(j) To smoke while trading in the streets or other public places;

(k) To be assisted by an unlicensed child;
(l) To beg;
(m) To go into any public house or any theater, music hall, or place of entertainment to trade there.

The general experience is that licensing not only lessens the number of children trading on the street, but diminishes from year to year the number even of licensed children. As early as 1900 the Liverpool committee reported that the application of the by-laws "has had the effect of greatly reducing the number of children trading in the streets, especially during school hours and late in the evenings, and of improving the condition, appearance, and behavior of those children who still engage in street trading." That year 1,049 licenses were granted. At the end of December of each of the following years the numbers were:

1903	732
1904	669
1906	553
1907	540

Meantime the law is being better enforced each year, as familiarity with its provisions increases among the children and familiarity with the children increases among the police. In 1907 there were 253 proceedings for trading without a license, mostly against young children and strangers ignorant of the law; and in four cases out of five the offenders were dismissed with a caution. The report from other cities is the same. In Birmingham the number of children trading in the streets decreased 500 between January, 1907, and January, 1908. In Newport during the last year reported the number decreased from 382 to 327. In Bradford, where the number of license holders has regularly fallen since 1903, the decrease during the last three years reported was 217; that is, the number fell from 597 to 380. In the neighboring city of Leeds, where street traders are not licensed, their number in 1905 was 892, or more than double as many as in Bradford. But in the latter place there is more industrial employment of children.

In response to inquiries as to the effect of licensing in preventing juvenile crime, it is difficult to get positive answers, partly because opinion as to the influence of licensing upon this class of delinquency differs, but chiefly because recent reforms in the method of treating youthful offenders in Great Britain make comparative statistics misleading. Speaking generally of the influence of the laws, the Liverpool watch committee says:

> During the last period under report (six months to June 30, 1905) not a single charge of immoral or indecent conduct has been made against a licensed girl, whereas a few years ago such charges were common, and there were only 2 licensed boys among the 68 committed

to the reformatory schools, and only 6 among the 583 committed to industrial schools.

The Manchester authorities also noted that commitments to industrial schools had decreased largely since the licensing regulations went into force. The Glasgow police report for 1906 mentions street trading as one cause of a recent increase of crime among young persons. The street-trading laws went into force in that city in the spring of 1906. Official statistics show that the number of convicted youthful offenders under 16 years of age fell from 2,236 in 1905, before the laws were in force, to 1,832 in 1907, the first full year they were in application, a decrease of 404. This decrease is not ascribed wholly to the introduction of licensing, because the probationary treatment of young offenders has recently been extended, under police caution, so that they do not come to trial before the courts so much as formerly. The registrar of police of that city said:

> In the opinion of the authorities most familiar with conditions of juvenile crime in Glasgow, the application of the street-trading act in this city has not yet made an appreciable difference in the number of offenders brought before the court.

On the other hand, in its report for 1907, the Newcastle watch committee says, in referring to a decrease of 161 in the number of juvenile offenses during the preceding year:

> Before licenses were granted by the watch committee inquiry as to the homes and circumstances of the children was made by two officers specially detailed for the work. They thus got into touch with the children and their parents, and the decrease of juvenile offenses above referred to is, I believe, one of the good results of the supervision and control which they subsequently exercised.

Though there is not yet a satisfactory statistical basis for the opinion that the licensing laws decrease crime, most police officials and others in touch with the problem seem to believe that in the long run these laws will assist in reducing crime not only among juveniles, but also among adults. The fact of being under official supervision, and having a recognized business status, give the young license holder a sense of responsibility. Home influences are more alert, especially where the child's earnings are an essential part of the family income. The child with a vested interest in the trade of his locality, represented by a license, himself enforces the law against unlicensed interlopers, and so becomes an upholder of this particular law, and perhaps later of law in general.

The influence of these regulations upon school attendance can be shown more precisely. In 1905 the Liverpool watch committee reported—

> That (the school attendance) of the licensed children is only a point over 1 per cent less than the average for the whole of the children attending the council schools, which would most probably

not be the case with an equal number of children if free from supervision, and, as a proof of this, the subcommittee may again point to the fact that only 6 licensed children were among the 82 committed to Hightown and the 336 committed to the day industrial schools for school offenses.

Three years later the police department of the same city could point to the fact that the percentage of attendance of street-trading children was actually higher than the average attendance in elementary schools, or 88.6 as compared with 88.2 per cent. During the first quarter of 1908 the street-trading children increased this margin of attendance to a full 1 per cent above the average attendance of all children in the schools. The Bradford school committee notes a marked improvement in the regularity of attendance of licensed children. The Manchester education committee reports, in 1907:

> The school attendances of children holding the badges for street trading issued by the watch committee have been regularly inquired into, and it is gratifying to state that on the whole it is most satisfactory. The regulations for street trading carried out by the police in Manchester have proved a great safeguard in preventing juvenile depravity, and have undoubtedly tended to decrease the number of children formerly sent to industrial schools.

In Manchester the street-trading children compare even better with the rest of the school population, in the matter of regular attendance, than in Liverpool. In August, 1908, the educational authorities supplied these figures for the preceding year: Average attendance of all children, 89.35 per cent; attendance of licensed street-trading children, 96.27 per cent.

As to the more general results of the law, the report of the chief constable of Liverpool for 1907 says:

> The streets are bad places for a child to play or to work in, but, until there is somewhere better for him to go to, there he must be, and the best thing to do is to face the evil and to minimize it as far as possible, license to trade in the streets only those who will not suffer physically and only those whose parents can not be persuaded or are unable, and indeed very many of them are unable, to find them some other employment, and teach them a little discipline by making them obey regulations.
>
> I will not pretend that all the licensed children are as clean and well behaved as they might be, but I will say that they are a great deal cleaner and better behaved than they would be if they were not licensed and had nobody looking after them.

The Newcastle police authorities thus summarize the effect of the regulations in that city:

> The licensing of juvenile street traders has undoubtedly had a good effect in clearing the streets of children begging under pretense of selling, preventing them from frequenting licensed premises (where intoxicants are sold), and practically stopping street tradin by girls under 16.

The report of the street-trading subcommittee of Bradford for 1907 contains the following testimony:

> It is admitted that as a result of the control of street trading by children there have been marked improvements, not only in the general condition and habits of the street-trading children, but to some extent in their home surroundings, as it tends to impress the parents with a greater sense of their responsibilities.
>
> There is no longer the same number of ragged children begging, actually or under pretense of selling, and those under 11 years have entirely disappeared.

In Birmingham, according to the police report, the licensed children "are now more orderly and civil." In this city and in Manchester the children are assisted with clothing, as they are in Liverpool. In Manchester a systematic effort is made to have the children apprenticed, and a record is kept of them after they leave school. There has been little opposition to the introduction of these laws. When they were proposed at Belfast some newspapers were at first hostile, fearing that the restriction to trading might injure paper sales in the street, and now and then a critic is found who points to violations of the law—which are occurring and from the nature of things must constantly occur—to prove that it has had no effect. But public opinion is decidedly in favor of the regulations, and though they have not been in force long enough and extensively enough to exert their full influence the conclusion is irresistible that they benefit the children at present and that probably in succeeding years, when they have been in continued operation for a generation, they will have benefited the health and morals of many of the weaker industrial population, and will have lessened among them both crime and poverty.

The Employment of Children Act does not give other local authorities all the powers which Liverpool received in 1899 and still exercises. Possibly the licensing policy has not accomplished so much in other cities for this reason. The Liverpool corporation has the explicit right to arrest for offenses under the act, to contribute toward the cost of a child's maintenance, lodgings, or clothing, and to visit the homes of children to see that they are properly treated. It is the opinion in that city that these additional powers greatly assist in making licensing successful.

OUTWORK, SWEATING, AND THE MINIMUM WAGE.

The principle of the minimum wage, which it is now sought to establish in the factory act, is entirely new in Great Britain; and in factories themselves the need of such a wage is not, even now, thought sufficiently urgent to shape serious legislative projects. The new proposals are aimed at sweating, which is chiefly associated with work done in the homes of workers living in the slums of large cities, where competition for a bare existence depresses earnings to the lowest limit. The misery found among this class of work people has been too often described to be unfamiliar. In some British industrial towns women work from sunrise till late into the night for the equivalent of $1 or $2 a week. No reliable estimate of the average wage of home workers can be made, but it is probably, for equal time, not much over half the average wage in factories. This is partly because, as a rule, less profitable occupations are followed in the homes; but it is largely due to other competitive conditions.

Outwork is technically in Great Britain work for an employer performed on premises not subject to factory inspection, but for the present purpose the term will be used to apply more particularly to some form of manufacturing or preparing articles for sale. Home work, often used interchangeably with outwork, is more comprehensive, and includes laundering and a number of other female occupations. In relation to sweating, too, it should be observed that small factories and workshops, nominally subject to factory inspection, are often seats of the same evils that afflict outworkers, and may even present those evils in an exaggerated form.

Some of the more obvious economic causes of outwork are (1) economy of capital on the part of the employer, (2) larger and more elastic labor supply, and (3) freedom from government supervision. The economy of capital is naturally greatest where rents are highest; therefore, we find much home work in densely populated districts. The worker must have a lodging whether he works at home or in the factory, and usually heat and light; so by utilizing the same space for manufacturing he saves for his employer three important items of expense. The labor supply is larger because women and children who, on account of domestic duties or, perhaps, on account of inefficiency could not be employed economically in a factory, can work at home irregular hours. The supply is more elastic, for the same reasons, and thus conforms to the convenience of many trades, like garment making, in which the demand for goods is concentrated at certain seasons and, on account of fashion changes and other elements of uncertainty, can not be anticipated by manufacturing in advance. Finally, freedom from government supervision enables unscrupulous employers to extort a greater profit from the service of their working people. This ultimately reacts on all employers by lowering the standard of wages and efficiency throughout the competitive area.

The condition of outworkers is much better in some industries and localities than in others, and it likewise varies widely within the limits of the same trade and district. It is the aim of the proposed legislation to equalize these conditions, so far as they relate to hours and wages, or to level them up to the higher existing standards. A parliamentary committee reporting upon home work in Great Britain, in the summer of 1908, had ascertained that "the earnings of a large number of people—mainly women who work in their homes—are so small as alone to be insufficient to sustain life in the most meager manner, even when they toil hard for extremely long hours." Not all these women are solely dependent on the product of their own exertions, but many are. An exhaustive private investigation of women workers in Birmingham showed that less than one-half of 1 per cent of the outworkers who were married (and a very large percentage of the total number were married) worked for pocket money. Nearly one-half of all the women were supporting themselves, and sometimes children, by their labor. The parliamentary committee found that in addition to wives and daughters who took in work to increase the family income, there were two classes who had no other recourse than their own earnings, (1) women who support themselves and sometimes fatherless families, who are usually regular workers and often possess some skill, and (2) wives who work when their husbands are out of employment, who are mostly casual hands and quite unskilled and therefore compelled to accept the lowest wage in the least desirable trades. For either of these classes to be reduced below a subsistence wage means one of three things, partial pauperization by being thrown upon the poor rates, gradual starvation and so physical deterioration as a worker, or vice and crime as the ultimate recourse of existence. Any one of these results not only ruins the individual, but helps to impoverish society, and therefore constitutes an economic motive for government intervention.

That outworkers should be paid less than factory workers is in part justified on broad economic grounds, relating both to competitive conditions of factory production and to the needs of these two classes of workers. In most industries the superior economy of factory manufacture is unquestioned, and its advantage continues to increase; therefore, in competition with home manufactures the factory owner can afford to pay a better wage. The Scottish Wholesale Cooperative Society determined to place its shirt making entirely on a factory basis. In competition with sweaters it lost money at first, but soon began to make a profit out of the experiment. The factory paid its operatives on an average 18s. 3d. ($4.44) a week, for 44 hours' work; the sweaters with whom it competed paid their women 10d. (20 cents) a day, for about 18 hours' work, and compelled them to supply their own thread. At anything like equal wages, therefore, the outworker could not be employed, though in the case cited the great difference in pay was probably due in part to the excessive profit made by the sweater. Testimony was given before the parliamentary committee just mentioned, in 1908, showing that upon shirts selling in England for 10s. 6d. ($2.56) a dozen, wholesale, the sweater paid for cutting, 1½d. (3 cents); making, 1s. 6d. (37 cents); finishing, 6d. (12 cents); total, 2s. 1½d. (52 cents); and the sweater gets 4s. (97 cents), or a profit of 1s. 10½d. (45 cents).

But the entire difference between the wages of outworkers and of factory operatives, so far as it is justifiable, does not depend alone on the superior economy of the factory. The expenses of home workers are sufficiently less to admit of their receiving lower compensation for their labor. It is said that 9 shillings ($2.19) in a home is better than 14 shillings ($3.41) in a factory. The home worker does not have to pay for the care of children, for expensive canned goods, or for washing and other services that the operative usually is obliged to hire or purchase. In Birmingham the charge for caring for young children and providing their midday meal is usually in the poorer districts 6d. (12 cents) a day; in Dundee it ranges from 2s. 6d. to 6s. (61 cents to $1.46) a week.

However, the relatively lower wages of outworkers are not in all cases explained by the causes just mentioned. In fact, no cause can justify a wage that will not subsist the worker. In Great Britain a subsistence wage for a single woman is estimated to be between $2.50 and $3 a week. The superintending sanitary inspector of Glasgow gives the items of expenditure upon which a weekly wage should be rated as follows: Food, 3s. (73 cents); rent, 2s. 4d. (57 cents); clothing, light, fire, household sundries, 2s. 6d. (61 cents); car fares between home and employer with goods, 10d. (20 cents); thread, 4d. (8 cents); sick and funeral society assessments, 4d. (8 cents); all other expenditures, 1s. 6d. (37 cents); total 10s. 10d. ($2.64). In London prices are somewhat higher, so that these items would total nearly 12s. ($2.92). If a home worker labors 10 hours a day, besides attending to her household duties, she will have to earn about 5 cents an hour to attain this minimum, allowing nothing for slack work or saving. However, abundant testimony was presented by workers and factory inspectors before the home-work committee last summer and on previous occasions to the effect that many home workers did not earn more than 2 cents an hour. A skilled workwoman, making shirt waists and kimono belts, testified that when fully employed her average net earnings were less than 6s. ($1.46) a week. Women workers at Cradley Heath average about 6s. ($1.46) a week when they work 14 hours a day.

The reasons for these small earnings are various. Much of the low-paid work is sewing, which requires little training, and competition is therefore keen; such employment is comparatively easy to obtain; a large proportion of the workers are engaged in the production of articles in competition with machinery; and cheap foreign-made goods tend to depress prices. Workers making baby linen, shirt waists, and underclothing—articles which a very large number of wives and mothers can make for themselves—must produce them at a very low price to keep the great body of consumers, the families of working and middle-class people, from buying the materials and making the articles in their homes.

If these and similar influences exhausted the causes for the underpayment of home work, there would be scarcely any hope for a remedy in legislation; but an equally important reason is the unorganized, unprotected condition of the weaker industrial classes who enter such occupations which expose them to heartless exploitation. This is indicated by the variation of wages for the same work in these industries. Such differences do not apply exclusively to home work. They are found in factories also, and will be considered later in the general discussion of wages. But it is in case of outworkers more particularly that they allow the pay of some to fall below the subsistence level. An investigation in Glasgow recently showed the following rates paid for similar work by different firms:

PIECE PRICES PAID TO HOME WORKERS IN GLASGOW BY DIFFERENT FIRMS FOR CERTAIN KINDS OF WORK.

Kind of work.	Unit.	Piece price paid by—	
		Best firms.	Other firms.
Shawl fringing	Dozen.	$0.47	$0.37
Cheap shirt finishing	...do..	.07	.03
Girls' underclothing	...do..	.18	.06
Finishing pajamas	...do..	.37	.16
Ladies' underclothing	...do..	.85	.37

Where there is an essential difference in the quality of the work, piece rates properly vary; for a worker can often earn more doing coarse or hastily-put-together articles at a low rate per dozen than in making expensive garments, requiring more care, at a much higher rate. But in the cases quoted the work is understood to be substantially the same where the higher and the lower scales prevail. The wide variation in rates of payment is due partly to the ignorance and partly to the needs of the workers, which prevent their informing themselves of the conditions of work at different establishments or from protesting against underpayment where it is known to be below the customary rate. In fact, some of these workers are not informed beforehand of the price they are to receive for their labor. Note the following examples, instanced by the research committee of the Christian Social Union:

(1) Brush drawer A. Is a bristle sorter. Does not know how much per pound she will be paid until she takes home the work.

Payments range from 5d. to 7d. [10 to 14 cents] per pound. To sort one pound of bristles takes about three hours.

(2) Brush drawer B. Is a worker in toothbrushes. Payments arbitrary, "according to mood of employers." If inferior bone is used payment is always lower, though there is no variation in the amount of work required.

(3) Tarpaulin, tent, and sack work. Workers know nothing of the price to be paid until they have the work in hand.

(4) Making cadets' pouches. Inworkers never know what they will be paid for work beforehand.

Sack makers receive 5d. to 7d. (10 to 14 cents) a dozen, and to make a dozen is a day's work. In making baskets the net earnings are 9d. (18 cents) a day.

For making cadet pouches a worker received 2s. 6d. (61 cents) for a week of 54 hours. At toothbrush making a worker employed all of every day, including Sundays, sometimes earned 7s. ($1.70) a week; but more usually earned between 5s. 6d. and 6s. ($1.34 and $1.46). For making the walls of a tent, 16 yards long, with 58 holes to make and 110 eyes to sew on, a worker is paid 9½d. (19 cents). It takes the whole day to finish one tent wall.

The proportion of outworkers who belong to this poorly paid class is large, but by no means includes their whole number. In some industries outwork is subsidiary to and coordinated with factory work, so that employment is regular and the rate of pay approximates more nearly that of factory hands. In centers of specialized industry these wages are relatively high. Londonderry is the center of shirt making for Great Britain, and here the industry is organized primarily upon a factory basis. In the factory they cut, make the trimmings—collar and wrist bands, bosoms, etc.—and hem the body of the shirt. The partially completed garments are then sent in various directions—sometimes 60 miles into the country—to home workers, who seam the sides, stitch on sleeves and trimmings, and make the buttonholes. There are about two outworkers for each factory operative. Women earn more than men, and though wages are generally lower in Ireland than in England, Irish shirt makers are better paid than those of Great Britain. In the factories learners begin at 4s. (97 cents) a week and earn as sewing-machine operators about 10s. ($2.43) weekly. Ironers and turners are paid more. Outworkers are paid by the piece, the rate for making up a dozen shirts varying with their quality from 2s. 6d. (61 cents) to 4s. 6d. ($1.10); and a family of four, working when not engaged in household duties, will make up 12 dozen in a week. This would make the average earnings presumably about the same as in the factory. A similar system of making gloves prevails at Yeovill, where the condition of outworkers is said to be unusually good. In both these cases the work is done largely in country cottages, where the money earnings of the family are supplemented by the produce of a garden and perhaps a cow or two, and the workers possess considerable skill. In the London clothing trade many factory firms pay their inworkers and outworkers the same rate, though some pay outworkers less. In both cases piece rates are paid, and the best work is usually done in the factory. It is said that some outworkers earn more than factory hands, because they work longer hours; but this is found to be true only in a few favored instances, where the outworker has a room apart from the family, where she can work undisturbed and without household interruptions. Factory operatives are more regularly employed than outworkers, since they are more apt to be kept on during the slack season. There are two classes of middlemen in this trade, the man who rents a shop in a district where home workers are abundant, from which he distributes work, receiving the work from a manufacturer in a different quarter of the city; and the contractor who has a workroom in the factory of the manufacturer. The former has some reason for existence, because by handling goods in quantities he saves on transportation between the workers and the manufacturer and thus greatly economizes the time of the workers, which would otherwise be lost in going a long distance to get and to return the parcels of work allotted them. The contractor performs no service, except in getting a greater amount of work out of his hands for a certain amount of money than would the manufacturer himself, and it is to these contractors that some of the worst sweating in this trade is due.

In the manufacture of artificial flowers, an industry somewhat depressed by foreign competition, factory hands, in addition to having more regular work as a rule, earn in London from 9s. ($2.19) to 40s. ($9.73) a week, taste and skill largely affecting the pay of this class of workers. Competent hands average between 15s. ($3.65) and 22s. ($5.35) a week. Outworkers can engage only in the least profitable parts of this occupation, and a large proportion of them earn only 1½d. or 2d. (3 or 4 cents) an hour. The following instances are given:

(1) Earning 4s. to 5s. (97 cents to $1.22) a week making poppies and common flowers.
(2) With help of her children earning 12s. ($2.92) a week and paying 4s. (97 cents) rent.
(3) Rarely makes as much as 6s. ($1.46) a week.
(4) Could earn from 6s. to 10s. ($1.46 to $2.43) a week by working 14 hours a day.

Here the great disadvantage of the outworker, in respect to wages, is due to the character of the work. In the case of embroidering, which is a separate trade of some importance in London, girls who have gone through a regular apprenticeship in a factory usually leave at the expiration of this time to become outworkers. The work is not seasonal, and employers say the girls prefer outwork because it permits them to work longer hours. Earnings inside and outside the factory are said to be about equal for equal time. In this trade skill counts, as it does in making artificial flowers, but there is no division of the work by which only the poorly paid grades are done outside the factory. Similar in these respects to the embroidering trade is burnishing silver and fine metal goods, which at Birmingham is largely followed in their homes by girls and women who have served a long apprenticeship in a factory or under an experienced home worker. This trade pays good hands from 12s. to 20s. ($2.92 to $4.87) a week, or about the same as embroidering.

The industrial outworkers of Birmingham have been classified in two groups: Unskilled, who are chiefly employed in carding hooks and eyes, buttons, and small hardware, and in packing pins and hairpins and the many small articles of metal manufactured in that city; and skilled workers, who are engaged principally in paper-box making, leather work, brush making, polishing and burnishing, and sewing, and as sewing-machine operators. The unskilled work does not pay enough to support a family and is followed as a rule only where there are children helpers or where the husband provides part of the income of the home. The same is true in a considerable measure even of the skilled occupations, and except in burnishing and in one or two similar trades, where a long training at low wages is necessary, few outworkers earn over 10s. ($2.43) a week. In Birmingham outwork is said to be on the wane:

> Home work is decreasing in most trades. Unless the worker is an old factory hand who has left to get married, the employer of to-day grows ever more disinclined to take the risk of giving work to be done away from his supervision. It is an extravagant system, which has its advantages when adopted to meet a sudden press of work to accommodate which the factory premises are inadequate, but giving out the work in small quantities, and fetching and carrying involve a great waste of time and effort, which does not fall only on the employees, though it falls on them most heavily.

Some employers have experimented with a regular delivery system for sending out and collecting work done outside their factories. But this proved a failure, because the workers were so irregular that it could not be told when new work was wanted or when completed work was ready for return, and so many useless calls were made that the expense was too great for the employers.

Home work has some domestic advantages that ought not to be overlooked. Sanitary inspectors report that in corresponding districts the houses of outworkers are cleaner and neater and the children in them are better cared for than in the homes of women who work in factories. In Birmingham the report of a private investigation shows that "the homes among these workers almost always attain a relatively high standard. The records of dirty or ill-kept houses are rare, though in the case of women who are dependent on their work there is naturally something to be desired in this respect." But quite a different story is told of the homes of many outworkers and sweatshop premises in London. Infant mortality is said to be less among home workers than among factory workers, providing other conditions are equal. Among the glove makers of Yeovill this mortality is less than the average in England and Wales, or 89.74 as compared with 118 per thousand.

With regard to the low wages paid some outworkers, the defenders of the system say that the recipients—poorly off as they are—would be in a worse condition without this recourse. The proportion of aged and invalid persons in these trades is larger than in factories, and in some instances it is possible for a home worker to assist in supporting a blind or crippled relative, who would have to be cared for in a public institution if the worker were in a factory. And there are many cases where these low wages help to supplement the poor relief, which would be the only recourse of the worker, if the sole alternative to such relief were factory employment.

In England boot and shoe making has not yet been completely centralized as a factory occupation as it has been in America, and the condition of shoemakers in districts where outwork on an extensive scale still continues suggests some of the compensations that factory employment offers in place of the greater freedom of the older form of domestic industry. In the first place, the whole family works, the children from 7 or 8 years of age assisting in "closing" the boots. The work is carried back and forth between cottage and warehouse by women. Domestic duties are neglected, since wages naturally continue low where so many cooperate to support the family, and the wife, therefore, has to dismiss home duties to assist her husband. The home is half residence, half factory; food is bought at a cook shop, the clothing is ready-made and generally poor and expensive; the husband works irregular hours, usually rising late mornings and making up by plying his trade until the small hours of the night. "The living wage, instead of being earned by the head of the family, is split up into four, five, and six parts, and absorbs the energies of wife and children."

These are some of the many-sided aspects of home work in Great Britain. A selection might be made of evidence showing outworkers earning $4 or $5 a week who support families and keep comfortable homes by working at trades that are usually considered either fields of unalleviated industrial oppressions or unsuitable occupations for women. There is the old file cutter, from Birmingham, who testified before the parliamentary committee last summer that she had followed this business in her home for 36 years, and while following it had grown from a weakly girl to a healthy woman with a family of sturdy children. She earned 4d. or 5d. (8 or 10 cents) an hour, and wanted only to be let alone. There is a Home Workers' League in England, founded 7 years ago to oppose legislation regulating this form of employment, containing some 3,000 worker members. These fear that wage boards and other proposed reforms will drive the work into the factories and thus deprive them of a livelihood. But meantime the earnings of large numbers of sweated workers are "insufficient to sustain life in the most meager manner"—and this condition the Government proposes to remedy so far as it can be done by public means.

Several suggestions have been made as to how a minimum wage for this class of workers might be determined and enforced; but all the proposals that have attracted serious attention provide for wage boards similar to those first organized in Victoria and now adopted in nearly all the Australian States. Each board would consist of an equal number of representatives of employers and employees, under an impartial chairman, with authority to establish prices of work, by time and by the piece, for the workers of a particular trade in a limited district. It is generally proposed that the factory and shop inspectors should enforce the wages and associated conditions of employment thus established. In Australia this system has upon the whole worked successfully, and in that country seems to be displacing the older method of compulsory arbitration, by which a court determines conditions of employment. In 1907 the British Government caused an investigation to be made of the working of the Australian laws, including compulsory arbitration, and the representative of the Government, while commending the influence of this legislation in the countries where it originated, did not advise its adoption in Great Britain. Passing by compulsory arbitration as going beyond present proposals, his objection to introducing wage boards, as existing in Australia, centered upon the difficulty of enforcing a legal minimum wage. This would be much greater in the mother country than in her colonies, because of the great population and vast urban districts, containing workers of every degree of aptitude and capacity, and of every industrial age, all of them subjected to unprotected competition from foreign workers. The practical impossibility of preventing collusion between masters and workers to evade the established wage—an embarassment even in Victoria—the whole problem of the incompetent worker and of juvenile hands and learners, the territorial differences of conditions within England itself affecting competition between districts, were all cited as obstacles to the successful application of the law. Nevertheless, it was thought that a system of special boards to supervise conditions in each natural industrial and territorial unit, officially recognized and coordinated by the Government, might be established for the purpose of securing more uniform conditions of employment and preventing some of the greater evils of sweating. The report proposed that the determinations of these boards should not be legally binding, and that their intervention should be of an advisory rather than of a compulsory character.

This report was considered by the parliamentary committee, which investigated the condition of home workers in Great Britain and submitted its recommendations in 1908. The committee, supported by the Government, has come to the conclusion that wage boards, in spite of this adverse report, promise enough improvement to justify their being tried as an experiment in some industries. After reviewing the oppressive conditions affecting outworkers and the need of an immediate remedy or palliative, the committee made three recommendations for the correction of these evils—compulsory registration of workers, wage boards, and a minimum wage. The first measure would be in part preliminary to the others, because only registered workers could select the labor members of the wage boards in their respective trades, and the enforcement of the board recommendations would be made easier by thus knowing to whom they applied. The substance of the committee's report in this connection is:

> That all home workers who are employed by other persons in producing or preparing articles for sale should be required to register their name, address, and class of work at, and receive a certificate of such registration from, the offices of the local authority, and that the keeping of accurate outworkers' lists by employers should be strictly enforced.
>
> That it should be an offense for any person to employ any home worker to produce or prepare any articles for sale by another person unless the worker produce a certificate of registration.

The recommendations as to wage boards are essentially the same as those already suggested. The committee would make it an offense to pay or to offer to pay a lower rate than that prescribed by the board in that particular trade and district. The recommendation as to a minimum wage is further elaborated as follows:

> That there should be legislation with regard to the rates of payment made to home workers who are employed in the production or preparation of articles for sale by other persons.
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> That such legislation should at first be tentative and experimental, and be limited in its scope to home workers engaged in the tailoring, shirt-making, underclothing, and baby-linen trades, and in the finishing processes of machine-made lace. The home secretary should be empowered after inquiry made to establish wage boards for other trades.

That the delivery and collection of work done at home should be done by persons in the direct employ and pay of the employer. Where that was not done, the amount which a worker could earn in a specified time should be calculated on a basis which included the time spent in fetching and returning the work as time occupied in doing the work.

The committee further recommends that the factory inspectors be made responsible for the enforcement of the law and of the wage-board determinations, as well as of the Truck Act and sanitary regulations applying to factories, which should be extended to all home workers and their tenements.

These recommendations mark the limit of proposed factory legislation, and, of course, are not yet realized in law and are still further from practical application. They purpose to attain by government intervention what in more highly skilled industries has been attained by trade unions and similar organizations. They recognize the responsibility of society for the welfare of the weakest workers, and the right of all to at least a living wage. Sooner or later the principle of these proposals, in this or another form, is pretty certain to be put into force in Great Britain.

SOCIAL AND ECONOMIC EFFECT OF LEGISLATION REGULATING THE EMPLOYMENT OF WOMEN AND CHILDREN.

In résumé, the present British legislation governing the working conditions of women and children consists of the factory and the mines acts, with coordinate local regulations affecting their application in particular districts, and the Employment of Children Act of 1903, relating to the work of children in occupations outside of factories and mines. Women engaged in occupations not regulated by the factory and mines acts (excepting shop assistants) are still without government supervision; but this it is proposed to remedy by wage boards. Outside of this main body of legislation are other industrial laws of great importance, notably the Workmen's Compensation Act, but these lie without the limits of the present discussion.

In considering the influence of this legislation upon the condition of workers, four groups of questions suggest themselves: What has been the effect in obtaining the specific object of particular provisions, such as shortening the hours of labor? What has been the effect upon conditions of employment not the direct object of legislation, such as the wages of women and children, and the relative employment of women and men in different industries? What has been the indirect and general influence upon the social well-being of women and children workers? And, finally, What has been the effect upon industry?

EFFECT OF PROVISIONS SHORTENING HOURS OF WORK.

No one questions that hours of work in factories are shorter at the present time than they ever were previously; but it is more difficult to determine whether they have been shortened by legislation, and if so, to what extent. And here two distinctions need to be made at the outset—between the average and the abnormal day in all establishments and between the average and the abnormal establishment. For instance, in a clothing factory the average working hours throughout the year may be 54 a week; but during the spring and autumn these hours, unless regulated, may rise to 66 or 72 a week. Likewise, of several boot and shoe factories a majority, and those generally the largest and best establishments, may have a 54-hour week, while a number of small shops, ranking as factories under the law, may work their hands 60 hours a week. Furthermore, of a number of clothing factories, several may be able to keep very near the 54-hour weekly average throughout the year, while supplying the same trade and competing successfully with factories that work short hours some months in the year and excessively long hours the remaining months.

These time variations, as well as the wage variations described later, found in competing industries in the same vicinity, indicate a margin within which the condition of workers might be improved without increasing the maximum labor cost of production, so as to raise the market price of the articles manufactured. For it is not reasonable to suppose that mills which regularly work fewer hours at higher wages than establishments which compete with them are working at a loss. Indeed, they are generally making a satisfactory profit. If so, it follows that the other establishments are either making an excessive profit out of their employees or that they are operating under uneconomic conditions. If the entire production of the articles in question could be centered in the best-organized mills, the articles could be sold at the same price, and the workers enjoy the advantages of shorter hours and higher wages. So far as legislation is able to hasten the uniform application of these superior conditions of production in any industry, by requiring the conditions observed in the best mills to be enforced in all, it is serving the workers without taxing the rest of the community, unless it be a few incompetent, overgrasping, or it may be merely unfortunate employers. English factory legislation—at least the modern acts—has followed the principle of bringing average conditions of employment up to the best conditions of employment in each industry. Consequently there are often a number of establishments that are not affected by the new amendments when these are made, because they represent the best existing conditions. Workers in such factories are directly little affected by the law, but indirectly they may feel its influence through improved conditions in other factories, where they may have friends or relatives employed or where they may some time be forced to seek employment themselves.

Another preliminary qualification needs to be made before discussing in detail such evidence as exists as to the effect of the factory acts upon hours of work. During the past century there appear to have been a number of economic influences besides legislation tending to reduce working hours. An obvious one has been the efforts of organized labor. The maximum hours of organized trades not regulated by legislation are fewer than the maximum hours permitted in factories. The greatest number of hours worked in the building and engineering trades is 56½ weekly, and in some engineering occupations it nowhere exceeds 54; while in many towns in all these trades the hours are fewer than this maximum. In the various branches of furniture making the unions have reduced working hours to 56, though the factory act still allows 60; and in the printing trade, largely through the same influence, 54 hours now constitute the maximum working week. In some industries, notably the cotton trade, men and women belong to the same union. In London men and women cigar makers belong to the same union. In the Liverpool upholstery shops a strong women's union has reduced hours from 55 to 50 a week. Even where women and children do not belong to trade unions, they sometimes benefit by the shorter hours obtained by these organizations on account of the correlation of their own work with that of men. In Liverpool the men's unions in the printing trade, by reducing working hours from 59 to 51 a week, have caused the same reduction in the hours of women workers. Perhaps, also, there is an imitative tendency toward fewer hours, induced partly by competition for labor, so that when a short working day is established in several trades it becomes more difficult for other industries or factories in the same vicinity to maintain an excessive working day.

A second influence in favor of a shorter workday has been the improvement of machinery. Where highly perfected and rapidly working automatic mechanism is used, handling a large amount of material in a limited time, manufacturers find it unprofitable to over-fatigue their workers. In industries as different as soap making, button making, and dry cleaning, too long a working day has proved uneconomic. If continuous processes are used three shifts of labor give better results than two shifts. In factory industries probably there are other direct causes of the voluntary tendency toward shorter hours, among which may be counted awakened social sympathies and an educated public opinion. But without attempting to enumerate these further, the tendency itself is well established. It is sufficiently indicated by the fact that with every recent shortening of the legal hours of work by amendments to the factory act establishments have been found voluntarily working still fewer hours.

The probable effect of the factory acts has been to shorten average hours in most establishments in most industries and in all establishments in some industries, for, although some factories may work fewer than the legal hours, the possibility of their doing so depends upon competing factories not working more than the maximum of hours permitted by the law. When the law limits hours to 55½ a week, factory A may work 50 hours and factory B 55½ hours and still be in competitive equilibrium. But if it were legally possible for factory B to work 60 hours weekly, factory A would be compelled to work 54 or 55 hours to maintain the same equilibrium.

Shorter hours for women and children mean in many cases shorter hours for men also. It is because they perceived this that prior to 1850 workingmen supported so actively the movement for a ten-hour day for women and children in textile factories. But this result does not necessarily follow in all industries. In Liverpool a private investigation showed that in ropewalks, in small printing establishments, and in watch factories men sometimes carried on women's work after the legal hours of the latter had expired. Where work of men, women, and children is not correlated—that is, where they do not respectively conduct different portions of a continuous process of manufacture—the hours of men are affected only indirectly by those of their colaborers. Now, though the hours of work of men are not regulated by the factory act, they do not upon the whole differ materially from those of women; but there are several industries, such as printing, for instance, in which men and women work together in operations not always closely correlated, where men are employed (at least in the busy season) longer than women. Furthermore, formerly when, on account of the small number employed or for other reasons, some factories in a particular industry were exempted from inspection, the hours of labor were often longer in the exempted than in the inspected factories. Finally, more particularly in the earlier stages of this legislation, in some trades a provision of the factory act shortening hours has been observed to have a direct and immediate influence upon the working day throughout the industry.

In Liverpool an investigation of the conditions of women's work indicates that the factory laws ceased to be the main influence in shortening hours of labor after 1867, "and that since that time the reductions made in the normal hours of work are not to be ascribed to the factory acts, but to the manufacturers themselves, who, in many cases, recognize the economy of short hours, and to trade-union action." In Birmingham, during a similar investigation, it was found "that the acts of 1864 and 1867 introduced changes, and did not merely enforce what was customary before, though in one or two cases the act was anticipated to some extent." But when the law of 1876 was introduced, still further reducing hours, "the evidence proves that generally the hours worked were less than the 56½ proposed by the new act." However, in that city (and we shall see that this applies as well to other places) the time prescribed by law, within which the hours of work should lie, caused the actual working day to be still further shortened, because it was impossible to get girls and women to the factories soon enough to work the full limit. As the Birmingham investigators say: "The conclusion seems to be that legislation has shortened hours by making women cease work earlier than they would have done, while they refused to start any earlier."

In Liverpool textile mills are the only establishments employing women on a large scale that do not work fewer hours than those permitted by law. Match factories work an hour daily less than this limit. It will be remembered that the legal hours in nontextile factories are now 60 a week, or 10½ hours on 5 days and 7½ on Saturday, while textile factories work 55½ hours a week. The conditions in some other trades are as follows: In clothing factories the London working hours average 8½ on 5 days, with the short Saturday, the girls usually going to the shop at 9 a. m. In Birmingham the working hours average about 9 a day, it being a matter of general experience "that longer hours deteriorate the quality of the work, and where power machines are used the power is too valuable to be provided for slack or tired workers." In Liverpool, in four clothing factories, the hours of work were as follows: 8.30 to 6, 9 to 6.30, 8 to 6, and 8.30 to 5.30. On Saturday work ceases at 1 or 2.30 p. m. An hour and a half is allowed for meals. In the tobacco trades, the London cigar makers, who are on piecework, average 8 hours a day; in Liverpool, where other forms of tobacco are also extensively manufactured, a 50-hour week is a long-established custom of the trade. In a number of London establishments manufacturing embroidery the hours are 9 to 9½ a day, with 4 or 5 hours on Saturday, work generally beginning at 9 in the morning and ending at from 6 to 7.30 in the evening, in different establishments, with 1½ hours for meals. In millinery shops the hours are often longer, extending from 9 a. m. till 8 p. m., except for apprentices, while a few places begin at 8.30 or 8.45 a. m. During the busy season some of the employees are kept till 9 p. m. In the Liverpool confectionery factories employees work 52½ hours a week. Women French polishers have hours "somewhat shorter than are allowed by law." In a large dry-cleaning and dyeing establishment, at Liverpool, the hours of women have been successively reduced from 56 a week to 53, and at last to 48, "not from any philanthropic motive, but from a business point of view," because "the work people put more energy into their work and take more interest in it if their hours are short." Of two Liverpool soap factories, one reduced hours from 50 a week to 45 in 1897, though men still work 48 hours, and the other has worked its employees only 39 hours a week since its establishment over 30 years ago.

These factory hours, though not affected by law, form a remarkable comparison to those of saleswomen and other shop attendants, who generally work over 60 hours and often as much as 70 hours a week, and with those of home workers, who define "sitting all day" as steady work from 8 a. m. to 11 p. m., minus only the most necessary household interruptions.

Though in many factories the later laws have not reduced hours of work, they have exercised an important influence in making these hours more regular. Irregularity is due principally to two causes, both of which are in great part remediable. The first is the bad working habits of the operatives themselves. In the old days workmen would lay off the first part of the week and then try to make up wages by excessive hours just before pay day. This is still an evil where manufacturing is carried on in the homes. The second cause is the seasonal demand for goods in some industries, which presses manufacturers for heavy deliveries at certain times of the year. They used to meet this by putting on extra employees, sending work to outworkers, and by overtime. These were uneconomic expedients, and under the influence of the factory regulations a better distribution of work throughout the year has in many trades already been accomplished. Of course when factories are working fewer than the maximum number of hours allowed by law, they may employ women and children up to that maximum, in case of emergency, without restriction. This is done in many instances. In addition there is the overtime, above the normal hours prescribed by the act, for which special provision is made in the statute. The latter kind of overtime is becoming rare. For one thing, factory accommodations are more adequate than formerly, so that extra hands can be taken on when needed. This causes some irregularity of employment for these temporary employees; or rather it might be said that they are given an opportunity for employment that would not exist if the regular hands worked longer hours. In the second place, factory administration is now more intelligent than heretofore, elements of cost are more closely watched, future markets are more confidently and accurately estimated, all of which make it more economical to anticipate the stress season by preparing in advance for its demands than to allow work to accumulate and introduce confusion into the factory organization. This effect of the factory laws first began to be felt strongly after the act of 1867 was passed, and represents the second phase of the influence of this legislation upon hours of work. The operation of that statute has been thus described:

> The great effect of this act stipulating a normal day was to lessen irregularity rather than to lessen hours worked per week, for even before 1867 the hours of work in a week often would not exceed 60. The need for alteration was not so much due to the number of hours as to the irregularity of work. At times of pressure employers worked their employees any number of hours they pleased, and the irregular habits of the work people themselves often compelled employers to work long hours to make up for lost time.

In case of children the immediate effect of the early factory laws in shortening their period of labor was unquestioned, and these laws continue to be influential in preventing too long hours. Even recent amendments, applying to particular trades, have had a direct effect in lessening overwork. This applies more particularly to boys working in company only with men, where without legislation there would be a tendency to approximate their hours to those of unregulated male employees. The provisions applying to glass works, blast furnaces, paper mills, and printing houses, especially those governing night work, are of this character.

Even where hours of work are shorter than those permitted by law, the factory acts applying to them still serve a purpose. The poor economy of excessive factory hours is now understood; but it is a truth that has to be learned anew by so many employers, and there are so many particular and temporary exceptions to its general application that abuses, though infrequent, can be checked only by statute. Laundries have recently been made subject to factory regulation. Evidence showed that prior to this women were obliged to work in them beyond normal hours, and occasionally even to the limit of physical endurance. And while legislation is not the sole cause of the shorter working-day of women and children, and might not have secured this end without other assisting influences, it has been a potent cause, and without this legal intervention conditions in some industries might not have improved materially during the past century.

INFLUENCE OF THE FACTORY ACTS UPON THE WAGES OF WOMEN AND CHILDREN.

It is no longer argued by people familiar with industrial history that shorter hours necessarily mean lower wages. But this argument was used extensively when the earlier British acts were passed. Here again, as in case of the shortening of hours, it is difficult to separate the effect of state regulation from the effect of other causes, but the upward tendency of the wages of women and children during the past century is a matter of statistical verification. The following table gives the most authoritative statement of the increase of the wages of women since 1820. The table shows the average relative wages of all women wage-earners, by decades, as stated in percentages of the average wage during the ten years ending with 1900. To show that there was more than a normal increase in women's wages, as compared with the wages of unregulated men's labor, the relative wages of workers of both sexes combined, using the decade ending with 1900 as the base, is given in a parallel column.

RELATIVE WAGES IN THE UNITED KINGDOM, 1820 TO 1900.

Decade ending—	Relative wages of—	
	Women employees.	Employees of both sexes.
1830	58	65
1840	56	60
1850	58	60
1860	62	65
1870	75	75
1880	93	95
1890	95	90
1900	100	100

Between 1830 and 1850 women's wages may have declined less than those of men because they were already near the subsistence level. An English authority, to whom these statistics are due, says: "Factory legislation has not lowered wages, but has been accompanied by a decided and progressive increase." It is not to be understood that factory laws are given as the cause of this increase, but they may have contributed to it by improving the efficiency of workers.

The wages of women in industries regulated by the factory acts are generally better than those in unregulated industries. Among the best paid women factory workers of England are the cotton operatives of Lancashire. This condition, however, is probably less an effect of the law than of the fact that the law happens to apply to a better grade of workers. There may be a more or less persistent ratio between the wages of men and those of women and children in the same industry (though this can not be shown in many industries), and if this is so the latter are indirect beneficiaries of the trade-union movement, which has raised the pay of men. Such results naturally follow when unions include both sexes, as in the Lancashire weaving factories. When the men's union and the women's union of London cigar makers amalgamated some years ago, women's wages were fixed on a scale the basis of which was the highest rate of pay then existing for women. Since amalgamation women's wages have risen 25 per cent or more, though the wages continue to be less than those of men. When women are unorganized there is less evidence that the presence of men's unions in the same industry influences their wages, though this has probably been the case in some instances. The product of labor has been greatly increased by the improvement of machinery, and a share of this increased product has been received by the wage-earner. Without these two favoring conditions the reduction of hours caused by the factory acts might have been accompanied by stationary or falling wages; but this is a speculation impossible to verify. Trades may be mentioned, like some kinds of decorating and polishing, where neither machinery nor labor unions have influenced conditions, in which wages have risen as working hours grew fewer. But workers in these trades were benefited by the rising standard of living of their fellow-workers in other industries, and their rate of compensation was affected by the competition for labor caused by high wages in other occupations.

The statistics available indicate that the enactment of the successive laws shortening the hours of labor did not, in the particular industries affected, interrupt the progressive improvement of wages that has marked the last century. In 1819 the hours of children working in the Glasgow cotton mills were reduced from 12½ to 12 a day, but there is no evidence that wages were lowered. After the act of 1833 the rates of pay of children and women workers at Oldham increased; but this may have been due to a revival of manufacturing during the next three years. The act of 1844 was very important, as extending regulation to women and to all employees under 18 years old; and there was no material change in the prosperity of the cotton industry immediately afterward to increase or depress wages. The statistics show that the reduction of hours of these classes of operatives, from 72 to 69 a week, did not reduce their earnings and that in some cases, for example power-loom weavers, the earnings increased. The acts of 1847, 1850, and 1853, limiting the hours of women and young persons to 10 and 10½ a day, affected all operatives in the cotton manufacture. The reduction amounted to about one-seventh, or was from 69 hours to 58 or 60 weekly. Unfortunately during these years there was a serious trade depression, affecting all manufacturing industries quite independently of legislation. This caused the factory owners to make a general reduction of 10 per cent in the pay of employees. Though the earnings of cotton operatives at Manchester fell off in 1847, when this reduction went into force, they did not decrease permanently even the full 10 per cent the lessened piecework rate would have justified, to say nothing of the 16 per cent corresponding to the shorter time worked. In the report of the factory inspector for 1850 statistics of the earnings of 31 weavers are given, showing a reduction of average weekly earnings in 1847 from 11s. 8d. to 10s. 6d. ($2.84 to $2.56) a week. This is exactly what the 10 per cent reduction in piecework rates would amount to. But indicating the reduction of earnings in weekly percentages, the difference between them and those earned before 1847 continues to grow less. In November, 1848, wages varied from 14.5 to 11.3 per cent under those paid in 1845, while in May, 1849, they ranged from 8.5 to 6.4 per cent less than under the former long hours and higher piecework rates. If the old and higher rate of payment had still remained in force, therefore, weavers would have earned more in 1849 working 58 hours than four years previously working 69 hours. Immediately after the passage of these acts operatives in Yorkshire and other woolen districts found their earnings reduced, but these earnings rapidly rose again as workers became adjusted to new conditions and increased the intensity of their labor.

The act of 1860, extending shorter hours to bleaching and dye works, was followed in Dundee, a center of the flax industry, by a reduction of earnings in 1861, but by an increase exceeding this reduction the next year, repeating the experience of the Manchester operatives in 1847 and 1848. Passing to the law of 1874, because the evidence as to the influence of intervening acts is clouded by trade conditions and unsupported by adequate statistics, there are abundant tables of wages showing that the reduction of hours from 60 to 56½ a week, which then took place, and raising the ages of full timers to 14 years, was not followed in Manchester by a fall in wages, and that even in the depression of 1880 earnings remained higher than when the act was passed. In the Dundee jute mills time wages were reduced as a result of the act of 1874, but this was followed by increases that amounted to 10 per cent by 1892. In these mills the pay of half timers rose immediately, apparently because the law reduced the supply of this labor.

If the factory acts lowered wages in any industry it probably would be in the textile mills; for these, as a rule, work nearest the maximum time allowed by law. An act reducing hours in an industry where neighboring factories present the time differential already noted might be expected to have less effect on wages, for employers already working as few or fewer hours than the new law allowed would have no motive in that law for reducing time wages, and pieceworkers would not be affected. Speaking of Liverpool, Miss Harrison, who investigated the condition of women workers in that city, remarks: "It is said that the reduction of one hour by the act of 1901 in textile factories made no difference in wages which are paid by time and no perceptible difference in piecework earnings." Stitchers in a bookbindery receive 14s. or 15s. ($3.41 or $3.65), where formerly they received 8s. and 10s. ($1.95 and $2.43). In a large soap factory wages have risen about 12 per cent in the last 30 years. In rubber factories earnings have increased, while the piecework rate has for some years been stationary.

The fact that there is a wage differential, like the time differential mentioned, in neighboring and competing factories, also makes it less likely that a legal reduction of hours will affect wages. In the different Leicester boot and shoe factories the following variations occur in rates paid for similar work:

WAGE VARIATIONS AMONG WOMEN OPERATIVES IN THE LEICESTER SHOE FACTORIES.

Occupation.	Rates of wages of women in—	
	Best factories.	Poorer factories.
Operator on silking machine, piecework earnings per hour	$0.09	$0.03
Operator on vamping machine, piecework earnings per hour	.08	$0.02 to .05
Fitter ... weekly wage	$3.65 to 4.87	2.19 to 3.41
Machinist ... do	3.89 to 4.87	2.43 to 3.89
Silker ... do	3.89 to 4.62	1.70 to 3.16
Vamper ... do	3.89 to 4.87	2.43 to 3.65
Closer ... do	3.65 to 4.38	1.70 to 2.92
Buttonholer ... do	3.89 to 4.62	1.95 to 3.16

This lack of uniform wages occurs also in different textile factories. The Dundee Social Union, in investigating the condition of mill workers in that city, found that there was—

> a considerable difference in the rates of wages paid by (different) employers. Further, it is common to find that where the general level of wages paid by two different employers is the same there is yet considerable disparity between the rates paid for particular processes. * * * The wages commonly paid in different mills for preparers varied from 14s. to 8s. 11d. [$3.41 to $2.17] for men, and from 12s. 2d. to 8s. 10d. [$2.96 to $2.15] for women; those for male shifters varied from 10s. 3d. to 8s. 9d. [$2.49 to $2.13]; for female shifters from 10s. 4d. to 7s. 2d. [$2.51 to $1.74]; and for spinners from 12s. to 9s. 7d. [$2.92 to $2.33]. (Higher rates paid for an extra number of spindles have been disregarded.) These variations can not be explained by age distribution, as the processes concerned are paid by time, and shifting serves as an apprenticeship to spinning.

The complex influences affecting wage movements never have been, and probably never will be, fully analyzed. But the following data and suggestions will help to show further how utterly wages fail to conform to a uniform standard, and therefore how little likelihood there is that they have been radically influenced by legislation.

In most industries the relative wages of men and women appear to be little affected by sex competition. Perhaps this occurs to a greater extent in the textile trades than elsewhere. A statistical inquiry has shown that in different cotton manufacturing districts men's and women's wages vary inversely to each other. The wages of men and boys are lowest, compared with the wages of men and boys in the same occupations in other places, where men form the largest fraction of the total number of cotton operatives; and in the same districts the average wages of women and girls are highest. But the same rule does not apply to the entire cotton industry at different periods. The number of women and girls for every thousand operatives has risen from 567 in 1861 to 620 in 1881 and to 628 in 1901; but the wages of female operatives have not fallen as a consequence. The cause of this inverse wage ratio in some of the Lancashire cities is probably the competition of men among themselves, due to two causes: (1) The half-time system fills the labor market with youths who have served in the mills in low-paid occupations which they have outgrown, but who, having no skilled trade, crowd the unskilled labor market, which thereupon becomes the measurer of the remuneration of mill workers, and (2) the exclusive pursuit of a single industry in these particular cities limits the variety of demand for male labor and crowds it into a single occupation. The same conditions obtain in the flax and jute center at Dundee. In that city, however, there is a lack of definition between men's and women's occupations that brings the two sexes into competition and directly depresses the wage of the former. In Lancashire this is avoided to some extent by labor organizations. Mule spinning and throstle spinning are mostly confined to men, while the ring spinners are women. In weaving there is not the same separation, but the heaviest and most highly paid work is generally done by men. In describing conditions in this district an investigator says:

> The various organizations of weavers have, from the introduction of the power loom, always included women as members on the same terms as men. The piecework list of prices, to which all workers must conform, applies to men and women alike. But it is interesting to observe that the maintenance of a standard rate has resulted in a real though unobtrusive segregation. There is no attempt to discriminate between women's work and men's work as such. The uniform scale of piecework prices includes an almost infinite variety of articles, from the plain calico, woven on narrow looms, to the broad and heavy-figured counterpanes, which tax the strength of the strongest men. In every mill we see both men and women at work, often at identical tasks. But, taking the cotton-weaving trade as a whole, the great majority of the women will be found engaged on the comparatively light work, paid for at the lower rates. On the other hand, a majority of the men will be found practically monopolizing the heavy trade, priced at higher rates per yard and resulting in larger weekly earnings.

Men remain in this trade because earnings are comparatively high, and the earnings are high because there is a strong union maintained by men, though admitting women. In Yorkshire and other districts, where the union has broken down, men have largely left the industry. In cigar making, where the men's and women's unions have amalgamated, although there is competition between the sexes and piecework is universal, the women's scale is 25 per cent lower than that of the men. Tables of comparative earnings of the two sexes in this trade show that the women's maximum is the men's minimum. Women also compete with men as compositors in the printing trades, though display and news work and other more difficult kinds of composition usually go to the men. Yet where the work is of identical quality, women work in London for 5½d. and 6d. (11 and 12 cents) the thousand "ens," while the union rate for men is now about 8½d. (17 cents) for the same amount. Men and women compete in French polishing, with the same difference in wages for similar work. Women received from 3d. to 5d. (6 to 10 cents) an hour, as compared with a man's 9d. (18 cents). Inquiries as to why this difference in rates existed, made by a social worker to a nonunion employer having both men and women in his shop, elicited the following responses: "That is a question you must solve; I'm often puzzled about it." "Is there any difference in the quality of the work?" "No; I prefer women's work; they are more conscientious and take a pride in their work; they often get a finer finish and have a greater perception of detail and more delicacy of work." "Do they work less quickly?" "A little, but not appreciably, and that is quite compensated for by the excellence of their work."

However, women are used for the less profitable jobs, that take the most time, such as finishing carved backs of chairs and other "fiddling" work.

These trades, however, are an exception, and most women engaged in industrial work do not compete with men.

> In Birmingham it is very difficult to get instances where men and women do the same work. * * * In the jewelry trade, the printing trade, as well as in miscellaneous trades, such as making swivels, studs, links, and medals, women do the lighter and more mechanical jobs. The finer work in the hook and eye and chain making is left to men, and men do all the important and principal parts in lamp making and japanning. In harness making, again women work on certain well-defined articles, though this trade is in a state of transition and women are in many cases supplanting men. * * * It is generally in the case of a domestic workshop, where a man employs his own family, that the usual division is transgressed.

Another authority says:

> In most trades in which women are employed in Liverpool there is no competition whatever between men and women; the manufacture of tobacco, cigar making, lucifer-match making, the enameling of copper letters and disks, cap making, paper-bag making, dressmaking, and millinery are almost entirely women's trades. In jam, soap, and paint making, and in confectionery, the manufacturing process is done by men, but girls are employed for packing,

labeling, etc., and for the lighter branches of work. In rope making the preparing, carding, and spinning machines are tended by women, and the men do the actual rope making. * * * In india rubber works men do the earlier processes of preparing, washing, and cleaning the new india rubber; they also do the cutting out. The women are employed in cementing, lasting, and making up the shoes.

Thus in most industries the demarcation between men and women's work is clear and impassable, but in those trades in which changes in the division of labor have taken place, the tendency has been for the proportion of women to increase.

Two phenomena, therefore, stand out more prominently than any others in connection with women's wages, the employment of women in distinct and generally less skilled and more poorly paid occupations than those of men in the same industry—and, it may be added, their almost exclusive employment in the poorest paid industries—and their relatively lower wages when they do the same work as men. No serious attempt has even been made to attribute either of these facts in the first instance to the factory laws, and there is little evidence that those laws have had even a subordinate influence upon the relative earnings of the two sexes.

The wages of women are low, apparently, because they are women; therefore, any influence of the law in replacing men by women and vice versa has had little effect on the rate of wages paid the former. A British investigator says:

> In the inquiry as to wages one of the outstanding facts elicited was that whenever women had replaced men the former always received a much lower wage, and that this wage was not proportionate to the skill or intelligence required by the work, but approximated to a certain fixed level—about 10s. to 12s. [$2.43 to $2.98] per week. The wage that the men previously received gave no criterion as to what the women would get, though as a general statement approximately correct, we may say that a woman would get from one-third to one-half the wages of a man.

This is not due altogether to women having a lower standard of living, for occupations engaged in by refined women whose living is comparatively expensive are often more poorly paid than rougher employments followed by women of a lower class whose expenses are not so high. Neither is it due entirely to the fact that many women are subsidized by their families and not responsible for their own support or that of others; for widows and self-supporting girls are often willing to accept the lowest wages. Yet both of these conditions have something to do with the question. Custom (though that itself has to be explained) is probably one of the most important immediate factors in the problem. It should be remembered that in earlier times, and at present throughout the Tropics and in most countries where there is little industrial development, custom rather than the economic consideration of each individual's value as a worker governs the rate of wages. For instance, throughout Mexico to-day such conventional wages rule, and are only beginning to be broken up by American competition for labor. This seems still to be true of the pay for women's labor in Great Britain.

Employers can usually give no other reason for the actual wage than the fact that such and such a figure is what women usually get in Birmingham. And in all cases piece rates are fixed by reference to this customary wage of the district, and the rates reduced or increased till the wage earned by piecework approximates to what the girls expect to get.

Like the Mexicans, Filipinos, and Negroes, some women workers do not aspire to earn more than the conventional wage, and will work shorter time if their rate is raised. A Liverpool employer complained that "the girls were satisfied with 8s. [$1.95] a week, and that if a girl made 12s. [$2.92] in one week she would not turn up till the end of the following week." A lady expert investigating the cigar making trade in London reported:

> Although the women workers have a scale of pay by which they should be able to make 20s. [$4.87] and even 30s. [$7.30] a week, yet they often do not care to exert themselves after they have secured what they feel necessary. As one girl put it, "I don't see what a girl wants more than 15s. [$3.65] a week for. It's the men with families that want more. When I've earned my 15s. [$3.65] I've done." A remark corroborated by wage books.

Yet back of this attitude there are other causes.

So long as a considerable body of women workers retain this attitude toward their earnings, it is of course more difficult for the more ambitious to raise their wages. The rate of pay in one trade is affected by the general level in all trades, and the competition that affects women is essentially that of their own sex. In women's trades, where no men are employed, such as dressmaking, millinery, embroidery, laundry work, and flower making, all of which are skilled occupations, wages are equally low.

One reason why women in Great Britain have not yet arrived at an enlightened sex consciousness as workers is that they lack the ability to form successful organizations. This is explained in several ways. One prominent woman worker says: "This inability to combine itself arises largely from the arrangement of women's lives, and the fact that their work does not take the first place in their minds." This is an important clue. Women occupy so largely the less skilled occupations in factories because they do not train themselves for more responsible positions. And they do not train because they do not expect to make factory work a life vocation.

Most of them look forward to marriage, where they will (to say the least) not be entirely responsible for the family's support. Employers do not care to take the trouble of training girls, because they think the girls would leave about the time they became most efficient. The same lack of ambition that characterizes the attitude of many working girls toward wages manifests itself in their attitude toward apprenticeship. The lithographers' union favors girl press feeders, because they make no effort to pick up the trade. In industry woman generally "has preferred to remain incompetent." The great lack of permanence of women workers as compared with men and the fact that a greater proportion of these workers are young affect both their average skill and their ability to organize. In a Liverpool factory the proportion of employees remaining after 10 years was in case of women 7 per cent, and in case of men and boys 42 per cent; of those who remained after 5 years the proportion of women was 22 per cent, and of men 64 per cent; and of those on the pay rolls 3 years previously the proportion remaining was, women 51 per cent, men 61 per cent. This employer stated:

> The difference between the sexes in the matter of employment, so far as our experience goes, is that boys up to the age of 16 come and go with great frequency; after that age they remain permanent fixtures. With girls it is exactly the opposite. From 14 to 18 a very large proportion remain; after that age they are continually leaving, generally to get married, or for other domestic reasons.

The importance of this influence upon wages is suggested by the fact that married women, in spite of disabilities peculiar to their status, and especially that more of them relatively have to bear the burden of household duties after factory hours, generally receive higher wages. In the Birmingham cycle trade married women's earnings average 11s. ($2.68), while the general average for women above 21 is 10s. 6d. ($2.56). Employers state: "They are more independent and better skilled and therefore always get more on piecework;" and, "Married women are in responsible positions, and are steadier and more skilled and so get better wages." Also, the influence of married women has been toward shortening hours. In the Lancashire spinning districts the wages of women average highest where the percentage of married women among the employees is greatest.

The following classified wage averages are from the Board of Trade Report of 1886, and, though not recent, are fairly representative of those prevailing in the textile trades during the succeeding two decades. A trade dispute in the cotton industry at present (1908) has put out of date the most recent information from Lancashire.

WAGES PER WEEK OF WOMEN AND GIRLS IN TEXTILE INDUSTRIES.

[From the Board of Trade Report, 1886.]

Industry.	Average wages.	Per cent of all women and girls whose full-time earnings were—				
		Under $2.43.	$2.43 and under $3.65.	$3.65 and under $4.87.	$4.87 and under $6.08.	$6.08 and over.
Lancashire and Cheshire cotton.....	$3.51	10.7	44.9	32.0	12.1	0.3
Yorkshire and Lancashire woolen...	3.20	10.6	64.0	25.3	.1	....
Yorkshire woolen and stuff..........	2.78	36.6	62.8	.6	....	....
West England stuff	2.60	45.3	54.7	....	....	....

The higher wages in Lancashire in the cotton industry are due in part at least to trade unions, and woolen wages may be indirectly affected by cotton wages in that district. Earnings are higher in districts where the textile manufactures are most centralized and highly organized, and lowest where they are only a subsidiary industry.

In Dundee an investigation made in 1904 showed the following wages paid women workers in the jute and flax mills of that city:

WOMEN'S WAGES PER WEEK IN DUNDEE TEXTILE MILLS, BY OCCUPATIONS, 1904.

Occupation.	Lowest wage.	Highest wage.	Median wage.	Predominant wage.	Number of observations.	Number receiving predominant wage.
Preparers	$1.44	$3.04	$2.15	$2.15	85	24
Shifters	1.76	2.33	2.03	2.01	26	4
Spinners	1.76	3.10	2.33	2.33	184	107
Winders (a)	1.70	3.35	2.68	2.68 2.92	31	[b] 7
Weavers (a)	1.22	3.65	2.92	2.92 3.41	46	[b] 10

[a] Pieceworkers.

[b] At each predominant wage.

The weekly wages of 206 male preparers were secured, showing a median wage of 10s. 4d. ($2.51), and a predominant wage of the same amount; and 80 male shifters received a median wage of 9s. 5d. ($2.29), while the predominant rates, paid to 16 in each case, were 9s. 5d. ($2.29), and 10s. 3d. ($2.49). The half timers whose wages were investigated numbered 150, and they received a median wage of 4s. (97 cents), and a predominant rate, paid to 35, of 3s. 7d. (87 cents). The median earnings of men power loom operatives were 19s. ($4.62), while men working on carpet looms earned 12s. ($2.92). In a Liverpool rope factory, with over 100 women employees, the average earnings of the women were as follows in the occupations stated: Preparers, 10s. ($2.43); carders, 8s. 2½d. ($2); opening knots, 6s. 10¼d. ($1.67); spinning green hemp, 9s. 7½d. ($2.34); machine spinning, 12s. ($2.92); hand spinning, 13s. ($3.16). In another factory of the same kind the per cent of women and girls employed earning under 6s. ($1.46) was 39; those earning 6s. and under 8s. ($1.46 and under $1.95) was 19; those earning 8s. and under 10s. ($1.95 and under $2.43) was 11; those earning 10s. and under 12s. ($2.43 and under $2.92) was 11; and those earning 12s. and over ($2.92 and over) was 20.

One of the most complete recent investigations of the wages of women has been made in Birmingham. From these tables the following are quoted:

RANGE OF WEEKLY WAGES AND AVERAGE WAGE OF GIRLS AND OF WOMEN IN BIRMINGHAM, BY OCCUPATIONS.

Occupation.	Range of wages.	Average wage of— Girls under 18.	Average wage of— Women 18 and over.
Metal working:			
Cartridge-case makers	$0.73	$2.13	$2.68
Bedstead lacquerers	$0.97 to 4.62	1.30	2.80
Brass polishers	1.22 to 4.38	1.68	3.28
Brass-core makers	1.46 to 7.30	....	4.25
Chandelier lathe hands	1.22 to 3.41	1.83	2.49
Cycle press hands	1.10 to 4.10	2.01	2.43
Electric-switch makers	.97 to 6.08	2.01	3.98
Pen press hands	.73 to 3.41	1.55	2.25
Pen grinders	.73 to 3.89	2.16	2.80
Screw machinists	1.46 to 4.32	1.83	2.31
Clothing:			
Corset machinists	.73 to 3.16	1.70	2.19
Trousers hands	.24 to 3.89	1.46	3.04
Coat hands	.37 to 4.38	1.64	3.61
Confectionery: Candy wrappers	.97 to 2.43	1.32	2.19
Jewelry:			
Gold polishers	1.22 to 4.87	1.46	3.08
Watch-jewel turners and polishers	.73 to 3.89	....	2.92
Gold-chain makers	.49 to 4.87	1.64	3.53
Silver-chain makers	.61 to 4.87	.97	2.68
Paper and printing:			
Bindery sewers	.97 to 3.65	1.70	2.92
Bindery folders	.97 to 2.92	1.95	2.37
Press feeders	.85 to 2.68	1.42	2.33
Leather:			
Boot machinists	.24 to 3.41	1.95	2.74
Harness stitchers	.73 to 4.38	1.95	2.56
Glass: Polishers	.85 to 4.14	1.46	2.92
Laundry:			
Washers	2.92	....	2.07
Ironers	.73 to 4.87	1.76	2.41
Sorters and packers	.85 to 2.43	1.64	2.19

The two most significant facts shown by the above table, and they are confirmed by the much more elaborate table covering several hundred occupations upon which it is based, are the low maximum average wage, of about $4 a week, and the uniformity of average earnings in a great variety of trades requiring different grades of skill and responsibility. Whether a girl polishes glassware or watch jewels, her average wage is the same; but she earns a trifle more, possibly because the work is heavier or less genteel, if she polishes brass.

The London shop trades show the same tendency to a uniform wage. In clothing factories wages vary from 12s. to 20s. ($2.92 to $4.87) a week; embroiderers earn from 15s. to 18s. ($3.65 to $4.38) weekly; jewel-case workers, 16s. ($3.89); milliners, from 15s. to 25s. ($3.65 to $6.08); upholsterers (sewing), 15s. ($3.65). There are exceptional instances of higher or lower earnings in all these trades, but the averages fall within the same limits. Women's wages in Great Britain, like their hour of arriving at their place of work, seem to be governed by custom, and though their level is rising from year to year they do not yet present the diversity characteristic of the pay of other workers.

INFLUENCE OF THE FACTORY ACTS UPON DISTRIBUTION OF EMPLOYMENT AMONG MEN, WOMEN, AND CHILDREN.

When the early factory laws of Great Britain went into force women workers opposed provisions in the factory acts limiting their hours of work for fear that such limitation would lead to the displacement of women by men. Women had been substituted for children in textile mills when the hours of the latter were first limited, and it was, perhaps, natural that the women should fear being in turn supplanted. But while the factory law has doubtless caused some redistribution of employment among workers of different age and sex it has not upon the whole lessened the demand for female labor.

It is true that there has been a decrease in the proportion of the female population working in industrial occupations since the factory acts first went into force, but there has been an increase precisely in those occupations where those acts might have been expected to have most influence. The following table gives the number of female employees in every thousand workers in several of the more important industries where the hours of labor have been restricted by factory legislation, by 10-year periods, from 1861 to 1901:

NUMBER OF FEMALES IN EVERY 1,000 EMPLOYEES, BY INDUSTRIES, 1861 TO 1901.

Industry.	1861.	1871.	1881.	1891.	1901.
Bookbinding	450	488	527	554	603
Boots and shoes	154	115	160	185	210
Cotton manufactures	567	598	620	609	628
Pottery and porcelain	311	354	384	385	392
Tailoring	208	254	330	427	471
Tobacco manufactures	221	296	435	548	601
Woolen and worsted manufactures	461	513	561	557	582

Meantime restrictive legislation, assisted by other favoring conditions, has lessened the employment of children. The per cent of the total number of children between the ages of 10 and 15 engaged in gainful occupations in England and Wales was as follows for the corresponding 10-year periods:

PER CENT OF CHILDREN 10 AND UNDER 15 YEARS OF AGE ENGAGED IN GAINFUL OCCUPATIONS, BY SEX, 1861 TO 1901.

Sex.	Per cent engaged in gainful occupations in—				
	1861.	1871.	1881.	1891.	1901.
Males 10 and under 15 years of age	36.9	32.1	22.9	26.0	21.9
Females 10 and under 15 years of age	20.2	20.4	15.1	16.3	12.0

It appears that women still continue to take the children's places in the factories to some extent. The per cent of the total workers in the textile industries who were males of different ages and who were females is given in the following table:

PER CENT OF MALE AND OF FEMALE WORKERS IN THE TEXTILE INDUSTRIES, 1835, 1850, 1885, AND 1890.

Sex.	Per cent in textile industries in—			
	1835.	1850.	1885.	1890.
Children under 13 years of age	13	6	9	5
Males 13 to 18 years of age	13	11	8	8
Males over 18 years of age	25	27	27	28
Females over 18 years of age	49	56	56	59

More recent figures show a continued decrease of child employment in the cotton trade.

NUMBER OF EMPLOYEES IN THE COTTON INDUSTRY, CLASSIFIED AS HALF TIMERS, YOUNG PERSONS, AND ADULTS, 1895 AND 1905.

Classification.	1895.	1905.
Half timers (under 13 or 14 years)	55,625	31,744
Young persons (13 or 14 to 18 years)	238,078	208,003
Adults	782,048	786,631
Total	1,075,751	1,026,378

Therefore, while the total number of employees in the cotton industry in 1905 was nearly 50,000 less than the number employed in 1895, the number of adults employed was greater by more than 4,000. It has been previously mentioned that there has recently been an increase in the number of half timers employed in the north England textile districts, due to the great activity of manufactures, which created an unusual demand for labor. Probably this movement has now ceased. Under normal conditions the factory law discourages even where it permits the employment of children. Many employers will not engage half timers because it is too much trouble to take care of school certificates, pay fees for medical examinations, and comply with the other formalities required. In a less degree there is the same disadvantage in employing young persons. A factory owner whose employees are all over 18 years of age is relieved of the worst embarrassments of government supervision. Half timers do not fit in with the routine of many factories, because they serve but part of the working hours. The influence of the factory law in discouraging child employment has been reenforced by the growing complexity of industry, which places a greater premium upon mature and intelligent workers.

To return to the employment of women, it was remarked that the proportion of the female population working in industrial occupations has declined during the past century. The following table shows the proportion of the total population of males and females, respectively, above 10 years of age reported as occupied at each census period:

PER CENT OF MALES AND OF FEMALES OVER 10 YEARS OLD REPORTED AS OCCUPIED IN THE UNITED KINGDOM, 1881, 1891, AND 1901.

Sex.	1881.	1891.	1901.
Males	82.7	82.7	83.4
Females	33.5	34.0	31.6

The slight increase in 1891, which is also shown in the figures relating to the employment of children, is ascribed to peculiar industrial conditions of a temporary nature. The proportion of women employed in Ireland is less than in England; the proportion employed in England is the same as the average for the United Kingdom, and the proportion in Scotland is considerably higher than in either of the other countries, being 33 per cent. In Scotland, possibly because the children are kept in school longer, women take the place of young people more than elsewhere in industrial life, and they engage in occupations followed in England by men.

There is a prevalent opinion in England that the proportion of women is increasing in the industries. Commenting upon this, the chief lady statistician of the Board of Trade says that this is due to the entry into the labor market of middle-class women, who engage in new occupations, and to the substitution of skilled workers employed full time for a larger number of unskilled workers intermittently employed.

Some of the chief industrial occupations where female labor is decreasing are coal mining, furniture making, lace making, and the manufacture of gloves. In lace making and also in the manufacture of paper fewer women are employed than formerly, because they have been displaced by machinery. Rag-cutting machinery more particularly has thrown them out of paper mills. They have been displaced to some extent in printing offices by folding machines, which are operated by men. In laundry work also there are relatively fewer women than formerly, though they still constitute over 95 per cent of the employees, because the introduction of machinery has made work for men that previously did not exist in these establishments.

Previous investigators had shown that even if the proportion of the total female population employed remained the same, the proportion of occupied females in industrial pursuits was falling, while the proportion engaged in domestic service, teaching, and other vocations rose. The later investigation of the Board of Trade emphasized the decline in industrial pursuits, as refuting the idea that women were driving men out of the trades. The conclusion of this report was that the employment of married women was decreasing; that casual employment was decreasing, but that there was an increase in the number of young women under 25 with definite occupations and of middle-class women. However, the employment of women was not increasing relatively to that of men. There was "not a single case of absolute decrease in the number of males in any groups (of occupations) which did not show an absolute decrease in the number of females." The greatest advance in female employment was in the case of tailoring, where there was also an absolute increase in the number of men. In textiles men and boys were gaining at the expense of women, and in boot and shoe manufactures the reverse was occurring. It needs to be remembered that in these comparisons it is necessary to make a distinction between absolute and relative increases in the number of either sex employed. In some occupations, such as tailoring, a man cutter may prepare goods for anywhere from 10 to 50 female workers. An expansion of the trade or its concentration in larger factories might increase the proportion of female workers, though the absolute number of male cutters employed was larger than before.

The relative employment of the two sexes shows some interesting variations in different cotton-manufacturing districts. In large urban centers, such as Wigan, Manchester, and Salford, where the greatest proportion of cotton operatives are women and girls, the greatest proportion of women and girl workers are not cotton operatives. In

Blackburn, Burnley, Preston, and Oldham, where the proportion of women and girl workers who are cotton operatives is highest, the proportion of men and boys who are cotton operatives is also highest.

The factory acts have not displaced women, according to the best testimony, partly because other influences are segregating men and women into noncompeting occupations, as was mentioned in connection with wages. Two principal causes for this have been the division of labor and the introduction of machinery. The latter, however, has acted in two directions, displacing women where it made possible continuous processes, carried on by complicated mechanism with little labor, or where the machinery introduced was heavy and required skill to operate, and displacing men where it substituted a simple repetition process for more complicated manipulation. The substitution in paper making of a continuous mechanical process for separate semi-mechanical operations and the introduction of heavy machines for lace making illustrate the former influence. Similarly in the United States men have replaced women in some branches of knitting since the introduction of machinery for making full-fashioned hose. On the other hand, machinery has increased the number of women employed in watch manufacture. In Lancashire the proportion of women in this industry rose from 4.6 per cent to 13.78 per cent during the decade ending with 1901. An increase of women in the tailoring trades and in the boot and shoe trade has followed the more extensive use of sewing machines. In Birmingham, where women are largely employed at metal presses and light lathe work, the introduction of machinery has caused them to displace men in the following industries: Brass lathe burnishing, chain making, cycle saddle making, general cycle work, enameling saucepans, piano frames, etc., harness stitching, cheap jewelry, lens grinding, making corset fasteners, wood box making, wire mattress weaving, military ornaments, printing press feeding, tailoring, tin plate and other press stamping, whip making, umbrella and umbrella frame making, book making, and core making in brass foundries. Machinery has in some cases simply transferred women's work from the home to the factory. File cutting and nail making are among such industries. At Birmingham pen making alone employs about 7,000 women, or 90 per cent of the employees in this industry. Women are employed in place of men because (1) they become more dexterous in the purely mechanical work, (2) they are less impatient over its monotony, and (3) they are cheaper. In the manufacture of jewelry there is the following distribution of occupations between men and women: Men do large and small work, refining and assaying, modeling, casting and alternative processes, electroplating, spoon and fork making, enameling, engraving, chasing, and embossing, jewel cutting and polishing, and gem setting, while women do burnishing, hand polishing, and jewelry polishing. Both men and women are employed at chain making and piercing. Lathe polishing is done by men in London and by women in Birmingham. It seems not unusual for women to enter a new branch of a trade somewhat earlier in the provinces than in the metropolis, possibly because outside of London they meet less resistance from old customs and long-established unions. The entry of women into chain making was favored by the substitution of machinery for hand processes. Piercing, which resembles fretwork, is done with a file upon fine work or with a saw upon large pieces. Saw piercing is now a woman's trade in Birmingham, though still done by men in London. Sometimes the transition from men to women is very rapid. In one cycle factory, in 1902, 80 men were employed at from 30s. to 40s. ($7.30 to $9.73) a week; in 1905 the men numbered but 20, women on the same machines doing the rest of the work at a wage in no case exceeding 18s. ($4.38). "When the men were dismissed they were told to go home and send their wives back in their places." In a tin factory where in 1885 the proportion of men to women was as five to one it was in 1900 as one to two.

Even where machinery has not been introduced in an industry, a greater division of labor often makes openings for women. A generation or so ago the jewel cases of London were made by men, who constructed and finished the entire case, and earned up to 36s. ($8.76) a week. Now men make the carved wooden boxes, but women cover and line them for a wage seldom exceeding 18s. ($4.38) a week.

Trade unions have fought against the introduction of women in all industries where labor is organized and where women have become real competitors with men. This is notably true in the printing trades. In Edinburgh the introduction of women dates from a dispute between the employers and the compositors' union, in which girls were brought in as strike breakers. At several other places in Great Britain women compositors were introduced for the same purpose. As a result of a trade dispute, a Birmingham pot and kettle maker dismissed his union men in 1898 and replaced them with women. A dispute with union cigar makers as to the proportion of apprentices to be employed is said to have occasioned the first use of women in that occupation. They have practically replaced men as strippers and cigar makers in the outside cities, though men still control conditions in these trades in London.

After women have secured a foothold in a trade where there is sex competition, the proportion employed sometimes increases but slowly. For instance, from 1881 to 1901 the per cent of women and girls of the total number employed in the industries just mentioned, in Liverpool, was as follows:

PER CENT OF FEMALES OF TOTAL EMPLOYEES IN BOOKBINDING, IN PRINTING, AND IN CIGAR MAKING, LIVERPOOL, 1881, 1891, AND 1901.

Industry.	1881.	1891.	1901.
Bookbinding	67.9	69.4	70.6
Printing and lithographing	3.3	5.6	9.7
Tobacco manufacturing	75.7	77.2	79.9

The proportion of women employed fluctuates in some industries, as indicated in the following table:

PER CENT OF FEMALES OF TOTAL EMPLOYEES IN THE MANUFACTURE OF EXPLOSIVES AND MATCHES AND OF SOAP, LIVERPOOL, 1881, 1891, AND 1901.

Industry.	1881.	1891.	1901.
Explosives and matches	79.1	89.4	75.9
Soap making	53.5	64.2	62.5

While the number of women engaged in industrial work is decreasing in proportion to the total number of women occupied and in proportion to the total population, it is possible—though the fact can not be verified by statistics—that the industrial product of women is not relatively declining. The total employment measured in days of work of woman labor even may have increased; for the number of women returned by the census as occupied in various industries is no index to the intensity and continuity of employment of each individual. A smaller number of women may be working more days than formerly. And all of our statistics, indicating increases of female labor in so many factory occupations and its extension into new fields, suggest that much industrial labor which even until recently was distributed among the homes is now becoming concentrated in larger manufacturing establishments. And this is a process which appears to have been, in its broad aspects; unhampered by the restriction of hours through factory legislation.

INFLUENCE OF THE FACTORY ACTS UPON THE GENERAL WELFARE OF WORKERS.

Apart from wages and hours of work, both of which fundamental conditions of workers' welfare have improved while the factory acts have been in force, and partly on account of them, some less direct and more general effects can be traced to these statutes. But this is a field that covers nearly all the ground for future reforms and extensions of this legislation, and the topic is one that in its larger interpretation deals with the things left undone rather than with the things which have been done. Improved factory accommodation, better sanitation, separation of the sexes during labor, the guarding of dangerous machinery and processes, have all protected and perhaps bettered the health and morals of operatives. At least that has been the direct object of these regulations, and without them conditions would be vastly worse than they are at present. But supervision of life inside the factories has not after all reached the heart of the question. The home and family as affected by the factory afford a problem that can be only partly solved by legislation touching the factory alone.

Preliminary to considering this main question, there are some material and moral benefits to be traced directly to the factory laws. They have made the hours of work more regular, relieving workers of the tyranny of their own bad habits and of inefficient industrial administration, whereby formerly they experienced alternations of idleness and excessive labor injurious alike to their health and morals.

The requirement that a child shall have passed a certain educational standard, and that if a half timer he shall attend school the full five sessions every week, has helped to enforce compulsory education; and the necessity of physical certificates based upon an examination by a qualified surgeon in order to obtain employment has made parents more intelligently solicitous for the health of their children. Cases often occur where parents first learn of a child's latent disease or deformity when the child is examined for a physical certificate, and in some instances this leads to prompt and successful treatment.

The presence of factory inspectors in every district, and their periodical visits to factories, foster a sense of responsibility for the welfare of workers that makes many employers go beyond the requirements of the law. This affects the moral protection of women operatives as well as the comfort of their material surroundings. A woman worker can confide things to an inspector of her own sex that otherwise would never reach the ears of her employer, and such confidences are sometimes necessary in the interest of factory discipline and of the weightiest welfare of female operatives.

We now come to three of the most important questions relating to factory life—the employment of married women, infant mortality, and physical degeneration. All of these questions are interdependent. Legislation might directly influence only the first of them.

The industrial employment of women does not appear materially to affect their marriage rate. Statistics show the following per cent remaining single at different ages in England and Wales, in London and in East London separately, and in five of the textile cities where women are most largely employed in factories.

PER CENT OF SINGLE WOMEN AT DIFFERENT AGE PERIODS, BY LOCALITY.

Locality.	Age periods.			
	15 and under 20.	20 and under 25.	25 and under 35.	35 and under 45.
England and Wales	98	70	33	16
London	98	71	36	19
East London ([a])	97	57	21	9
Blackburn	99	70	33	16
Bolton	99	72	32	15
Burnley	97	64	27	14
Oldham	98	68	29	12
Preston	98	71	35	19

[a] In East London there is a low per cent of women employed in factories, but of the women who are employed there is a high per cent married.

These figures show only normal variations, or differences which it would be difficult to explain on the ground of industrial employment. They dispose equally of the claim sometimes made that the high earnings of girls in the cotton districts lead them to make early and improvident marriages; or that when a woman becomes self-supporting at an early age she is less disposed to marry. The large per cent of women married among the East London poor is the most significant fact in the table.

Possibly one reason why cotton factory girls do not avoid marriage is that it makes little change in their manner of living. A lady factory inspector reports:

> At 13 years of age a majority of these women have begun to work in a factory, to handle their own money, to mix with a large number of people with all the excitement and gossip of factory life. They thus in most cases grow up entirely ignorant of everything pertaining to domesticity. After marriage, therefore, it is hardly probable that they will willingly relinquish this life to undertake work of which they are in so large a measure ignorant, and which is robbed of all that is to them pleasant and exciting.

Another lady expert, comparing conditions in south England with those in these textile cities, says:

> The women of the north have not been inclined to regard industrial employment merely as a means of a livelihood for a short period preceding marriage; they have regarded it as their occupation in life far more than domestic management. In the south of England, where factory industries are of but small magnitude and the demand for domestic servants is much greater, the attitude of working girls is entirely different. As a rule they look forward to marriage as releasing them from industry.

Yet the proportion of married women occupied varies widely in different parts of the textile counties. In 1901 it was 37.9 per cent in Blackburn, or considerably more than the proportion of all women returned as occupied in the United Kingdom, and only 15.1 per cent in Bolton, in the same vicinity. However, Blackburn is a weaving town and Bolton a spinning center, which explains this discrepancy, married women being more largely employed in the former occupation. The following table gives more general figures for the textile districts:

PER CENT OF WOMEN OVER 18 YEARS OF AGE WHO ARE EMPLOYED AND PER CENT OF THOSE EMPLOYED WHO ARE MARRIED OR WIDOWED, BY TEXTILE DISTRICTS.

Textile district.	Per cent of women employed—	
	Who are over 18 years of age.	Over 18 years of age who are married or widowed.
Lancashire and Cheshire cotton mills	67.2	32.9
Yorkshire woolen mills	83.0	29.8
Yorkshire mixed woolen and worsted mills	76.9	23.6
Yorkshire worsted mills	62.9	21.2

It is found that relatively fewer married or widowed women work in mills in small towns than in mills situated in large cities. In the Dundee flax and jute mills the proportion of female employees over 18 years of age who are married is estimated (upon a basis of replies obtained from 3,269 women workers) to be 25 per cent. The census figures for 1901 indicate a wide variation in the proportion of married and widowed women occupied in various parts of the country, the extremes in industrial cities ranging from about 12 per cent to 40 per cent. A different per cent, that of all the occupied women who are married and widowed, according to the last census, in the Lancashire cities having over 100,000 population, is given in the last column of the following table:

NUMBER OF FEMALES OVER 10 YEARS OF AGE, NUMBER AND PER CENT WHO ARE OCCUPIED, AND NUMBER AND PER CENT OF THOSE OCCUPIED WHO ARE MARRIED, BY LOCALITY.

Locality.	Total female population over 10 years of age.	Total occupied females over 10.	Women occupied who are married or widowed.	Per cent of total females over 10 who are occupied.	Per cent of total occupied females who are married or widowed.
Blackburn	55,363	31,445	10,708	56.8	34.1
Bolton	70,461	30,283	5,411	43.0	17.9
Liverpool	275,094	85,058	21,457	30.9	25.2
Manchester	219,630	86,975	22,764	39.6	26.2
Oldham	58,050	28,049	6,285	48.3	22.4
Preston	48,583	25,284	7,438	52.0	29.4
Salford	88,681	33,640	7,919	37.9	23.5
Total	815,862	320,734	81,982	39.3	25.5

These percentages, however, are subject to a very important qualification on account of the varying extent to which young girls are employed in different industries. They disguise the fact that in Blackburn nearly one-fifth of the total female population over 10 years of age consists of occupied married women, while in Salford less than one-eleventh falls into this category. These latter are the important proportions from the sociological point of view.

In Birmingham the percentages are somewhat lower, the married or widowed forming 23 per cent of the occupied females and 21 per cent of those engaged in factories. In London, 23.7 per cent of the occupied women are widowed or married. A private investigation in Liverpool, covering several thousand women workers, indicated that the per cent of the female employees who were married or widowed, in different industries, was as follows: Cotton, 51.6; shirt makers and seamstresses, 41.9; hemp and rope works, 38.4; tailoresses, 27.5; milliners and dressmakers, 17.3; oil, grease, soap, and resin works, 11.7; tobacco factories, 10.6; food workers, 9.6; paper boxes and bags and stationery, 9.3; bookbinders, 8.7; bleaching, printing, and dye works, 5.4; printing and lithographing offices, 4.3; explosives and match factories, 2.9. As a rule married women are found more largely in trades followed partly in the homes. But they have an important place in factory industries both in the textile districts and in Birmingham. These figures are considerably higher in some industries than the average for the United States, where, in 1900, but 21.2 per cent of the female cotton mill operatives were married, widowed, or divorced, 28.8 per cent of the seamstresses, 14.2 per cent of the shirt makers, and 19.7 per cent of the tailoresses. But in some of the trades employing a smaller number of women the per cent of married employees is higher than in England. The proportion of married employees varies in different factories in the same city and industry. In two of eight pen factories at Birmingham half the female employees were married; in four, more than one-third were married; and in the two remaining, about one-third were married.

One of the most important economic effects of the employment of married women is its influence upon men's wages. In factory trades married women are said to be most extensively employed where women's wages are highest. This is not alone because married women usually receive higher wages, for the average wage of girls under 18 years is highest where the proportion of married operatives is greatest. In summing up these facts, the statistician of the Board of Trade attributes them—"(1) To the higher wages obtainable by girls and by women in this part of the cotton district, and (2) to the lower wages earned by men in this part of the cotton district, both circumstances rendering women reluctant to give up work after marriage." Here, at least, we find the two conditions of high female and low male wages combined, whichever may be the cause of the other. In a recent sociological study of Westham, one of the big London workingmen's suburbs, the investigators conclude: "There is a tendency for industries employing cheap women's and children's labor to arise in casual labor districts, and the casual laborer is often kept in a district by his family's occupation." The comment upon this condition is that "the women and children support the man, who degenerates into a loafer." In Dundee, where similar conditions obtain, investigators express the following opinion: "It is our impression that the married woman in Dundee is seldom continuously at work when the regular earnings of her husband are over £1 [$4.87]. Several of the married women expressed the opinion that men should be paid at least £1 [$4.87] a week, and wives would then have no need to work."

Among the most important social effects of the employment of married women is its influence upon housekeeping and diet, upon the care and control of children, and upon infant mortality. In many cases bad home conditions and the fact the wife is working may both alike be due to a third cause, which most frequently is a drunken husband. On the other hand, the drunken husband may be the product of the factory woman's ill-kept home. In Birmingham the homes of occupied women were found generally neater than was expected, though they did not compare favorably with those where the wife was not employed. But especially in the textile districts of north England the employment of wives in factories has led to lower standards of family comfort and to unwholesome diet. Factory surgeons, inspectors, and social workers in this part of England all comment upon the absence of wholesome and well-cooked food, for which less economical and less nutritious diet is substituted. Bread, sometimes butter or drippings, and boiled tea seem to be the staple fare. Children often have nothing but "bread and tap" (dry bread and hydrant water) for their luncheon. Sometimes the same fare is continued at night, while the parents have cold food with a pint of beer, strengthened with rum, at a public house. In Scotland kitchen economy is better understood. Here porridge supplements bread, and rice, potatoes, peas, and broth are more common on the tables.

Regularity of school attendance may be assumed as an index of the care of children. In Birmingham private investigation shows that from homes where the mother works only 27.8 per cent of the children attend school regularly, as compared with 50.5 per cent from homes where the mother is not employed. There are at hand no corresponding statistics from other places, but testimony supports the opinion that the condition is approximately the same elsewhere.

It is also the testimony that the employment of married women tends to diminish the birth rate, and it is reasonable to suppose that when the family income is dependent largely upon the work of the wife she will be indisposed to interrupt it by assuming the duties of a mother. One of the lady sanitary inspectors of Bradford writes: "I am sorry to say that motherhood interferes with wage-earning, and therefore any and every means are adopted to prevent this." The number of births per 1,000 women between the ages of 15 and 45, in Bradford and in England and Wales, was as follows during the 3-year periods indicated:

BIRTHS PER 1,000 WOMEN BETWEEN THE AGES OF 15 AND 45, IN CERTAIN 3-YEAR PERIODS AND IN 1906, BY LOCALITY.

Locality.	1880-1882.	1890-1892.	1900-1902.	1906.
Bradford	129.1	105.3	83.8	75.5
England and Wales	147.7	129.7	114.8	(a)

[a] Not reported.

The Dundee investigations suggest, though sufficient statistics were not obtained to confirm the point, that the employment of women in factories before childbirth may cause their children to be of light weight; and the deaths due to a number of causes attributable to the general condition of prematurity are probably larger than the average among the infants of this class of workers.

The relation of the factory employment of women to infant mortality seems well established, though there must be other important factors in the problem. In Bradford the mortality of children under 1 year is 160 per 1,000 among working mothers, as compared with 40.8 per 1,000 among those of mothers who are not working. The following table gives some suggestive figures pointing to similar results. "Infantile mortality" means number of deaths per 1,000 infants under 1 year of age.

INFANTILE MORTALITY, 1896 TO 1906, AND PER CENT OF OCCUPIED WOMEN 15 AND UNDER 35 YEARS OF AGE WHO ARE MARRIED OR WIDOWED, IN SPECIFIED LOCALITIES.

Locality.	Annual deaths per 1,000 infants under 1 year of age, 1896 to 1906.	Per cent of women 15 and under 35 years of age who are occupied.	
		Total.	Married or widowed.
England and Wales	133	(a)	(a)
Burnley	208	90.9	59.7
Preston	208	89.4	50.5
Blackburn	183	91.8	63.9
Oldham	170	87.3	33.4
Bolton	166	87.4	24.7

[a] Not reported.

Factory employment of women seems to be the only condition common to these textile towns that sufficiently distinguishes them from England and Wales as a whole to account for their relatively high infant mortality. But the fact that the infant mortality does not vary in direct ratio to the proportion of married women employed suggests other contributory causes. This suspicion is strengthened by the fact that the ratio of infant mortality has recently risen in Preston and Blackburn, though the employment of women in those cities is declining. But this may be due to poorer heredity and the persistence of household customs, the outgrowth of previous employment. The following table relating to 331 families in Dundee adds to the force of the one already given:

CHILDREN, LIVING AND DEAD, IN CERTAIN FAMILIES INVESTIGATED IN DUNDEE WHERE MOTHERS WORK BEFORE AND AFTER CHILDBIRTH COMPARED WITH FAMILIES WHERE MOTHERS DO NOT WORK.

	Number of mothers.	Number of children—			
		Born.	Living.	Dead.	Died first year.
Mothers working	240	885	365	520	462
Mothers not working	91	460	265	195	168

Where mothers worked a majority of the children are dead, where they did not work a majority are alive (all the mothers are from the working classes), and the respective mortality per 1,000 births, during the first year, is 522 and 365. Commenting on this condition the Dundee investigators say: "The obligation to support a family and also to bring it up is an unnatural condition of life, which leads to the usual consequences—broken-down mothers in early life and ill-nourished, rickety children, who develop into weedy, unhealthy men and women." Though Dundee has not so high an infant mortality rate as several towns in the English textile districts, it has the highest of the 15 principal towns of Scotland, averaging for the last decade 176, as compared with 149 in Glasgow, which is the largest city in the country and has the next highest rate. The death rate has fallen slightly in Scotland, as it has in England. The average rate in Preston for the 11 years ending with 1906 was 208, and the following year it was but 158. This was caused in part by an exceptionally favorable season, the death rate all over England being less than the normal. In Preston the rate fluctuated between 263, in 1897, and 150, in 1905, the variations being irregular from year to year.

The higher death rate of infants whose mothers are employed in industrial work may be ascribed broadly to two general causes, (1) prenatal conditions and (2) neglect after birth. Where mothers work unfavorable prenatal conditions are nearly constant from year to year, but neglect after birth causes deaths to fluctuate accordingly as the season is more or less favorable for the survival of infants receiving improper care. In Dundee the deaths within a week of birth are very large, and those due to "immaturity" are more frequent than in cities where fewer mothers work. "It is impossible to apportion the cases of immaturity to definite causes, but it may be broadly stated that premature birth and other causes of death classified with it under the head of immaturity are due to congenital weakness in the infant, and this congenital weakness it is usual to attribute to prenatal causes." One of the leading English experts reports: "The effects of poverty and hard work while the child is being formed in the womb do undoubtedly have the effect of producing weakly children, who either grow up weakly or die."

The first phase of material neglect, after the child is born, forced upon the mother by the necessity of working in a factory, is the cessation of breast feeding. And the relative mortality of infants not fed at the breast appears to be higher in case of women engaged in industrial work, even in their homes, than in case of other mothers. The Research Committee of the Christian Social Union made an investigation of the causes of infant mortality among the London working classes. Factory women were not included within the scope of the inquiries. The following table shows the relative deaths per 1,000 infants, during the first year, classified according to the occupations of the mothers and to the manner of feeding:

NUMBER OF DEATHS PER 1,000 INFANTS DURING THE FIRST YEAR, BY CLASSIFIED OCCUPATION OF MOTHERS AND BY METHOD OF FEEDING.

Occupation of mother.	Breast fed.	Hand fed.	Mixed feeding.
Household duties only	118.8	220.3	113.7
Industrial work (outworkers)	147.3	258.4	292.3
Charing or doing other janitor service	221.4	237.4	143.5

Taking the whole number of children in all three classes who died in infancy, the death rate of breast-fed children is 145.1 per thousand, as against 230.4 per thousand of hand-fed children. Factory work, often resumed by the mothers even before the legal period of 4 weeks has expired, makes breast feeding impossible, and this accounts for the wide fluctuations from year to year in the infant mortality of such factory towns as Preston. In a favorable season, when milk can be kept cool and there are no sudden changes or extremes of temperature, the mortality from gastric diseases, the consequence mostly of artificial feeding, suddenly declines, only to rise again the next unfavorable summer.

The ignorant and careless feeding of the factory workers' children is a principal cause of their higher mortality as compared with hand-fed infants in middle-class homes. The National League for Physical Education and Improvement, of London, issues a circular to working mothers, entitled "How to bring up a baby." Among the rules are: Never force food down a child's throat, nor feed it when it retches. Never give a baby teething powders, soothing syrups, tea, coffee, beer, wine, spirits, herrings or bloaters, new bread, pastry, cheese, nuts, or unripe fruits.

A subcommittee appointed to inquire into the high rate of infant mortality at Preston, where, in spite of the temporary improvement recently shown, the average rate by 5-year periods has risen, since 1885, from 208 to 236, reported:

> (1) First among these causes is the employment of female labor in mills. (2) The return of the mother to her work within a short period after her confinement, necessitating the nursing out of infants, with its attendant evils of artificial feeding, and violent and sudden changes of temperature during their removal night and morning through the cold air of the streets. (3) Ignorance of household duties of the ordinary factory girl, resulting in the house air being continually foul and poisonous, and the baby being woefully neglected as regards cleanliness, and fed upon unwholesome and utterly wrong food.

A typical Lancashire mother thus describes the diet of a 3-months old baby: "It 'ad some sausages this morning; it does like sausages." "Do you ever give it 'chips' (i. e., Saratoga chips)?" "Oh, ay, it's a bobby for chips, especially wi' vinegar—it'll ait owt, will that child!" No milk was taken at this house. These ill-fed children, if they survive, grow up with appetites jaded by improper feeding, not by overfeeding and the natural consequence is a craving for stimulants. A physician with long experience as a certifying surgeon in the factory districts, now retired and engaged in social philanthropic work, described how he visited a department some friends had established for feeding at noontime some of the poorer or more neglected school children of a factory suburb. Curious to test the quality of the food that was given, he tasted the soup, but was obliged to reject the mouthful he had taken because it burned with pepper. But the children were enjoying it, and when he brought the matter to the attention of the cook, the latter informed him that the little ones were incapable of relishing any but such most highly seasoned dishes. From pepper to spirits is but a step in the gastronomic economy of the factory worker's household. Lighter stimulants, such as tea, so extensively used by factory women, are taken to satisfy the natural craving for something warm where the diet is composed so largely of cold or improperly prepared food. And all these things trace back, in a direct and luminously distinct line, to the employment of prospective wives and of mothers in the factories.

Yet even the most enthusiastic social reformers do not call for amendments to the law to prevent women—or even to prevent mothers—from working in factories. This employment is recognized as an economic necessity for the working people at present. It is a condition that it would be far better for a country never to reach—even at the expense of less wealth and so-called industrial progress—but once incurred it can not be remedied abruptly. However, amendments forbidding the employment of mothers immediately before and for two or three months after childbirth, combined if necessary with temporary pensions to working mothers, to carry them over this critical period, are advocated by men who would not be called extremists. Meanwhile the municipal authorities, through their lady health visitors and private associations, are doing something to meet the worst evils arising from these causes. The Dundee Social Union is making efforts in three directions:

(1) To encourage the breast feeding of infants; (2) to discourage married women's work; and (3) to provide a center for educational work among women.

(1) Breast feeding is encouraged by the provision of good, nourishing dinners, consisting of soup, meat, potatoes, milk pudding, and bread, at a cost of 2d. [4 cents] each (or free in necessitous cases) for mothers who are nursing their own babies and who are unable to provide a proper meal for themselves. (2) To discourage married women's work a maternity club provides 1s. 6d. to 3s. [37 to 73 cents] weekly for three months—varying according to the mother's previous payments—to mothers who stay from work to nurse their babies. During this time the mothers receive also free dinners. (3) The educative work is at present limited to the weekly weighing of the infants, with advice as to feeding and management, and simple, practical lectures by a qualified nurse, with long experience, on how to feed and clothe the baby. This part of the work, combined with the home visiting of birth cases by two lady health visitors specially appointed for this duty, has been found of great value, but the hope is that at no distant date a complete "school for mothers" may be developed. Any mother may bring her baby to be weighed, and during last year 293 availed themselves of the privilege. The results in the lessening of the rate of infant mortality are most encouraging. Among the 130 entered on the books for the year preceding August, 1907, the death rate was only 6 per cent as compared with 20 per cent for the district. Eighty-four per cent of these mothers fed their babies from the breast until they returned to work.

INFLUENCE OF THE FACTORY ACTS UPON INDUSTRY.

The industrial progress of Great Britain during the past century has been too marked to have been retarded materially by legislation. In some cases it was found advisable, after an amendment of general application had been made to the factory law, to except from this provision a particular industry; or else such exceptions have been made when the amendment was first enacted. For instance, the regulations as to hours of work for women and young persons have been modified in case of fruit canneries, fish-curing establishments, and other places where perishable products are handled. Wherever the factory act has seriously hampered an industry as a whole, it has been changed, so far as possible without sacrificing the obvious welfare of the workers, to consult the needs of that industry. Consequently there are few, if any, instances where an entire branch of manufacture has been checked by legislation for the protection of employees. Neither can the progress of any industry, unless by somewhat fanciful speculation, be traced to the influence of the factory laws. But these laws do appear to have at least three positive effects, due to their changing the competitive relation of the different manufacturers within single industries.

Most regulative acts, when they are fairly enforced, are more burdensome to the small manufacturer than to the large one. Other things being equal, in most industries large factories are more economical than small ones, and the latter even up competition by working longer hours, sometimes at lower wages. We have the extreme of this relation in the sweat shop as compared with the large factory. The influence of the factory acts, not immediate and revolutionary but gradual and progressive, seems to have been in three directions—to force work out of the smaller and ill-equipped factories into the large ones; to force it out of small factories into unregulated home industries; or to compel the introduction of labor-saving machinery. As the last influence is primary, it may be first considered. When the hours of work of children in ropewalks and in factories for manufacturing twist tobacco were limited, power twisting and winding machinery was substituted for child labor in turning the wheels. In match factories the substitution of automatic machinery in the processes preliminary to dipping are traced directly to restrictions on the hours of children. In small printing offices folding machines have been introduced since the overtime of female workers was limited by law, and in a Liverpool tin factory a soldering machine was introduced for the same reason.

The rules regulating dangerous trades are found in practice to bear more heavily upon small shops, where employees often work under unwholesome conditions. The cost of complying with sanitary requirements, installing ventilating plants, and making obligatory changes in apparatus, constitutes a much larger fraction of the entire capital employed by a small shop master than by a modern factory, which is usually in a building erected expressly for manufacturing purposes, and has an up-to-date equipment. The cost of the attending physician falls relatively heavier on the small employer.

So, cases have been noted where small works, such as match factories, have closed rather than comply with the requirements of the law.

Where the work is of such a character that it can be carried on in the home, the factory owner with small capital naturally seeks to extend his business first in this direction, partly to evade the regulations as to hours of work and overtime of women and children, and partly because his resources do not enable him to provide factory accommodations conforming to the statutory requirements.

An American needs to bear in mind, in considering the influence of factory laws upon British industry and the reaction of industrial conditions upon those laws, that working conditions are not sheltered by a protective tariff and that the manufacturer has always been able to appeal to the dangers of unrestricted foreign competition in opposing an extension of the act. Due regard has been had to the limitations to industrial regulation that this situation theoretically imposes, and partly for this reason Parliament has taken extreme care in these laws to consult the interests of employers as well as of workers.

The most vigorous opposition to the factory acts and their various amendments has been centered on the limitations to the employment of women and children. Though this opposition is no longer so active as formerly—and among better employers and those representing the largest employing interests has ceased entirely—the arguments used by its exponents are still of interest because they contain so many falsified predictions. Most of these predictions related to the effects of the proposed laws upon industry, which it was supposed would be ruined by official regulation. These prophecies proved untrue, partly, perhaps, because they were fundamentally wrong in their first assumptions, but chiefly because they regarded industry as static. The prophets failed to foresee the constant change in the methods, processes, and operations of manufacture and the organization of business that made predictions based on existing conditions out of date almost as soon as uttered. Factory legislation may modify the channels through which industry flows, but can hardly check, even momentarily, its course.

CONCLUSION.

The examination of the condition of woman and child wage-earners in Great Britain, and more especially the relation of the State to this class of workers, which is here concluded, has of necessity been cursory and fragmentary. Largely it is based upon documentary and other printed material, interpreted in the light of personal observation and corrected by interviews upon the ground. Credit has not been given to the various authors quoted, because much is taken from fugitive (though not for that reason less valuable or authoritative) reports, from various municipal and local publications, and from the rich social periodical literature which does so much credit to British humanitarian movements. Two works, Women Workers in Liverpool and in Birmingham, have been used almost exclusively for information relating to female employment in those two cities. They do not touch upon the condition of children, except indirectly. The report of the Dundee Social Union, published in 1905, is particularly valuable as a local study of conditions of factory employment affecting the homes, and of the social condition of workers in general. The publications of the Women's Industrial Council of London, of the Royal Society of Arts, of the British Institute of Social Service, of the Women's Trade Union League, of the Anti-Sweating League, of the Committee on Wage-Earning Children, of the Industrial Law Committee, of the British Association for Labor Legislation, of the Research Committee of the Christian Social Union, and of other local or general societies all contain material supplementing the government reports, and covering fields not yet made the subject of official investigation.

One movement, tending perhaps to influence the condition of women workers more than that of men, deserves more than the passing mention that can be here given it. That is the increasing effort, fostered both by private societies and by public means, to provide for the apprenticing of young people or for their industrial training by other agencies. Girls are now apprenticed, though usually without indentures, in several trades, such as cigar making, embroidery, dressmaking, polishing, to some extent in printing, and in some clothing factories. An association is investigating the opening for girls in different branches of skilled work, cooperating with the educational authorities to secure training facilities in the technical departments in those occupations that promise the most opportunities, and educating the girls themselves both in the desirability of training for a particular line of employment and in the fields of industrial work most likely to afford them a livelihood. Similar work is being done in the case of boys, and in some cities the educational authorities, or societies cooperating with them, do not drop the boy as soon as he has left his studies, but follow him up during the first years of after life and direct and counsel him toward skilled trades and a definite career. In a word, it is recognized by practical measures that one of the first ways to improve the condition of wage-earners from the weaker industrial classes is to increase their efficiency.

Many of the conditions surrounding woman and child workers in Great Britain are very bad. They are here described and accounted for entirely on the basis of British evidence. The whole complex of conditions in which the lives of these workers are passed seems to casual observation worse than that of similar workers in most parts of America. But the darkest spots in America are in many ways quite as dark as any of those in the older country. And the value of a study of British conditions lies in the more vivid appreciation it gives us of the ultimate evil tendencies of even regulated industrialism upon workers. Broader and more generous remedies must be discovered for these evils before it is too late. Such remedies are being experimented with in England. Present conditions in that country are an improvement upon those of the past; but it is coming to be understood that the influence of the law must exceed the bounds of the factory. Reforms must extend into the homes of workers, governing the intimate affairs of domestic life, and they can be accomplished only by gradually introducing higher efficiency, higher earnings, and a more intelligent distribution of home expenditures. Fundamentally, therefore, the problem has two aspects—economic and educational. The importance of both aspects is recognized, and the method of education is understood. Economic readjustment to make possible higher earnings is a yet untried field of legislation. England seems disposed to enter it experimentally, however, by establishing wage boards.

MINIMUM WAGE ACT, 1908, NEW SOUTH WALES.

AN ACT to provide a minimum wage for certain persons; to make better provision in certain cases for the payment of overtime and tea money; to amend the Factories and Shops Act, 1896; and for purposes consequent thereon and incidental thereto. [Assented to, 24th December, 1908.]

*Be it enacted by * * * Parliament assembled, and by the authority of the same, as follows:*

PRELIMINARY.

1. This act shall commence on the first day of January, one thousand nine hundred and nine, and may be cited as the "Minimum Wage Act, 1908."

2. In this act,—

"Early-closing acts" means the Early-closing Act, 1899, the Early-closing (Amendment) Act, 1900, and the Early-closing (Hairdressers'-shops) Act, 1906.

"Employer" means—

(*a*) Any person for whom a workman or shop assistant works, and includes any agent, manager, foreman, or other person acting, or apparently acting, in the control of any workman or shop assistant;

(*b*) Any person, company, or association employing persons in a factory, warehouse, or shop, or occupying any office, building, or place used as a factory, warehouse, or shop, and includes any agent, manager, foreman, or other person acting, or apparently acting, in the general management or control of a factory, warehouse, or shop.

"Factory" means factory as defined in the Factories and Shops Act, 1896.

"Shop assistant" and "shop" mean respectively shop assistant and shop as defined by the early-closing acts.

"Workman" means—

(*a*) Any person employed at any handicraft, or in preparing or manufacturing any article for trade or sale, and includes any person employed in a bakehouse, or laundry, or in dye works, but does not include any inmate of an institution of a charitable nature;

(*b*) Any person who is employed in a factory or who works in a factory at any kind of work whatever.

3. (1) A workman works overtime within the meaning of this act when he works more than forty-eight hours in any week or after six o'clock in the evening on any working day.

(2) A shop assistant works overtime within the meaning of this act when he works more than one half-hour after the closing time of the shop in terms of the early-closing acts.

MINIMUM WAGE.

4. No workman or shop assistant shall be employed unless in the receipt of a weekly wage of at least four shillings [97 cents], irrespective of any amount earned as overtime.

Whosoever employs any such person in contravention of this section shall be liable to a penalty not exceeding two pounds [$9.73].

5. Whosoever, either directly or indirectly, or by any pretence or device, requires or permits any person to pay or give, or receives from any person any consideration, premium, or bonus for the engaging or employing by him of any female in preparing, working at, dealing with, or manufacturing articles of clothing or wearing apparel for trade or sale shall be liable on conviction to a penalty not exceeding ten pounds [$48.67]; and the person who has paid or given such consideration, premium, or bonus may recover the same in any court of competent jurisdiction from the person who received the same.

OVERTIME AND TEA MONEY.

6. (1) Where a workman or shop assistant, being a male under sixteen years of age or a female, works overtime, his employer shall, unless exempted under this section, pay such workmen or shop assistant not less than three pence [6 cents] for every hour or portion of an hour of the overtime worked.

Such overtime shall be paid for at intervals of not more than one month.

(2) Provided that where it is proved to the satisfaction of the minister that, by reason of the customs or exigencies of any trade or employment, or for other reason, it is desirable to exempt such trade or employment with regard to males under sixteen years of age, either generally or in any particular locality, from the operation of this section, he may grant such exemption for such time as he thinks fit.

(3) Provided also that payment for overtime may be claimed either under this section or under section thirty-seven of the Factories and Shops Act, 1896.

(4) If any employer fails to carry out the provisions of this section he shall be liable to a penalty not exceeding two pounds [$9.73].

7. Section thirty-seven of the Factories and Shops Act, 1896, is amended by inserting after the words "at the rate of time and a half" the following words: "Such payment shall be made at intervals of not more than one month."

8. Where any workman or shop assistant, being a male under sixteen years of age or a female, is required by his employer to work overtime on any day, the employer shall on such day pay such workman or shop assistant a sum of not less than sixpence [12 cents] as tea money, and if he fails to carry out the provisions of this section he shall be liable to a penalty not exceeding two pounds [$9.73].

SUPPLEMENTAL.

9. (1) Every employer shall—

(*a*) Keep a record, in the form prescribed, of overtime worked by such of his workmen or shop assistants as are males under sixteen years of age or females;

(*b*) Produce such record and furnish extracts therefrom to an inspector appointed as hereinafter provided when called upon to do so.

(2) If any employer fails to carry out any of the provisions of this section, he shall be liable to a penalty not exceeding ten pounds [$48.67].

10. (1) An inspector appointed under the Factories and Shops Act, 1896, may, in addition to the powers thereby conferred on him,—

(*a*) At any reasonable hour, by day or night, enter any building, room, or place where he has reasonable cause to believe a workman or shop assistant is employed;

(*b*) Examine any workman or shop assistant, either alone or in the presence of any other person, with respect to any matter dealt with in this act, and require him to sign a declaration of the truth of the matters in respect of which he is so examined;

(*c*) Require the production of and examine and take extracts from any record required by this act to be kept.

(2) Any person who obstructs any such inspector in the exercise of his powers under this section, or who by word or act, or by concealing any person, prevents the examination as aforesid of any workman or shop assistant, shall be liable to a penalty not exceeding twenty pounds [$97.33].

11. The governor may at any time after the passing of this act make regulations for carrying out its provisions and prescribing the forms to be used in its administration, and may in such regulations impose any penalty not exceeding ten pounds [$48.67] for any breach of the same.

A copy of such regulations shall be laid before both Houses of Parliament without delay.

12. Contraventions or breaches of this act, or of the regulations made thereunder, shall be reported to the minister by inspectors, and no proceedings in respect thereof shall be instituted without the authority of the minister.

13. The penalty for any such contravention or breach may be recovered before a stipendiary or police magistrate, or any two justices of the peace in petty sessions: Provided that proceedings for recovering any such penalty must be commenced within three months after such contravention or breach.

SAVINGS.

14. This act shall not apply where all the persons employed as workmen and shop assistants are members of the employer's family, related in the first or second degree by blood or first degree by marriage to the employer.

RECENT REPORTS OF STATE BUREAUS OF LABOR STATISTICS.

ILLINOIS.

Fourteenth Biennial Report of the Bureau of Labor Statistics of the State of Illinois. 1906. David Ross, Secretary of Board of Commissioners of Labor. x, 358 pp.

This report consists of two parts, as follows: Part I, Manufactures of Illinois, 167 pages; Part II, Statistics of women working in factories, 190 pages.

MANUFACTURES.—This part presents a continuation of the statistics of manufactures in Illinois for the year 1904, collected by the United States Bureau of the Census and received too late for publication in the Thirteenth Biennial Report of the Illinois Bureau of Labor Statistics. Tables are given showing statistics for the 31 cities having a population of 8,000 and over and for the leading industries of the State.

WORKING WOMEN IN FACTORIES.—This investigation was conducted in the cities of Chicago, Elgin, Bloomington, and Springfield during the year 1906. Data obtained from the pay rolls of 86 establishments were amended and corroborated by schedules secured from 2,545 individual employees engaged in 460 occupations and in 37 industries. Of these employees 451 were engaged in the meat packing industry, 228 in the manufacture of watches, 217 in the manufacture of paper boxes, 199 in the manufacture of shoes, 174 in laundries, and 170 in the manufacture of binding twine.

The average earnings reported by 2,258 employees for one current week was $7.49. Of these employees 5.3 per cent earned less than $4 per week, 40.7 per cent earned from $4 to $7 per week, 37.3 per cent earned from $7 to $10 per week, and 16.7 per cent earned $10 and over per week. Of the total employees 1,303 or 57.7 per cent reported working a full year of from 50 to 52 weeks. These reported average earnings for the year of $356. Tables are also given showing the conditions of the homes, the amount paid for board, time of leaving home for work, car fare, health, previous occupations, age at beginning work, present age, years attending school, etc., together with tables showing in detail for 37 industries statistics of employment and of wages and earnings of working women.

MARYLAND.

Sixteenth Annual Report of the Bureau of Statistics and Information of Maryland, 1907. Charles J. Fox, Chief. 204 pp.

The following are the subjects presented in this report: The child-labor law and its enforcement, 58 pages; inspection of clothing and other manufactures, 15 pages; free employment agency, 12 pages; census of buildings in Baltimore city, 21 pages; agricultural statistics, 14 pages; cost of living, 9 pages; in labor circles, 9 pages; strikes and lockouts, 15 pages; new incorporations, 22 pages; immigration, 3 pages; conferences, 1 page; financial statement of the bureau, 1 page.

The Child-Labor Law and its Enforcement.—The work of enforcing what is generally known as the child-labor law was placed upon the labor bureau by the state legislature in 1906. In this chapter is given the results of the work under this law during 1907. To children between 12 and 16 years of age 9,634 labor permits were issued—5,953 to boys and 3,681 to girls. Of this total 342 labor permits were issued to colored boys and 71 to colored girls. In Baltimore city the labor permits issued numbered 8,206—5,026 to boys and 3,180 to girls, of which 306 were to colored boys and 60 to colored girls. Applications for permits to the number of 1,550 were refused. The arrests made during 1907 for the violation of the law numbered 42.

A summary of the work of the various district inspectors shows that there were employed in the manufacturing establishments and factories of various kinds inspected in Baltimore city 2,188 males and 1,781 females under 16 years of age. In wholesale and retail stores and in offices there were employed 1,313 males and 458 females under 16 years of age. The average wages for the whole city for children engaged in the manufacturing industries was $3.79 per week, and for children employed in stores, offices, etc., $3.32 per week. Also there is given the degree of intelligence of the children, hours of labor per day, sanitary condition of surroundings, etc.

The chapter, further, contains a report on the applications for relief investigated by the Charity Organization Society, the need of relief being based upon the alleged loss of wages of children to whom labor permits had been refused. There were 53 cases referred to the secretary of the society, and reports were received in regard to 44 of the cases so referred.

Inspection of Clothing and Other Manufactures.—During the year 1907 the work of inspecting establishments where clothing and other articles are made which come under the act commonly known as the "sweat-shop law" was actively pursued and with satisfactory results. The old-time sweat shop has in large measure been eliminated from the manufacture of clothing in the city of Baltimore.

After inspection and report thereon, during the year 1907 there were 916 permits issued to proprietors to work and employ 18,690 people in the manufacture, chiefly, of various articles pertaining to the clothing trade. Of the total permits 527 were issued to proprietors of factories and workshops and 389 to proprietors who worked in tenements and dwellings. The number of people who were authorized to be employed in the factories and workshops aggregated 17,819 and in the tenements and dwellings 871. Of children under 16 years of age there were employed 129 males and 393 females; of those under 14 years of age there were employed 28 males and 57 females. Tables, by inspection districts, give in detail number of employees by age and sex, kind of articles made, and conditions, sanitary, social, etc., existing in connection with each tenement, dwelling, and factory inspected.

Free Employment Agency.—During 1907, the year covered by this report, there were 188 applications for positions—161 by males and 27 by females. Of the applicants, 36 were laborers, 25 were clerks, 14 were farm hands, and the remainder were distributed among 56 other occupations. Applications for help numbered 61—for male help 40 and for female help 21. There were 66 positions filled—42 by males and 24 by females. As to character of positions filled, 26 were clothing workers, 11 were farm hands, 11 were laborers, and the remainder secured positions in 5 other lines of employment.

Cost of Living.—Under this title comparative prices of various articles of food and fuel in the Baltimore markets are presented for the years 1892, 1895, 1905, 1906, and 1907. A table is also given showing the average monthly retail prices of the principal articles of food for eleven months (February to December) of 1907, compiled from prices quoted in the daily papers of Baltimore. In conjunction with the prices of food commodities, etc., there are presented for 502 persons engaged in 37 different occupations in 1907 hours worked and earnings per day, days worked during the year, and average yearly earnings. For persons engaged in a part of the occupations the average yearly earnings for 1907 are placed in comparison with those for 1906, 1905, and 1904.

In Labor Circles.—Under this caption is presented the returns for 1907 from 56 labor organizations, having a reported membership of 7,221. A list of the unions reporting is given, with name of each organization, name and address of secretary, membership, hours of labor per day, and minimum rate of wages per week. For the skilled trades, the lowest reported union wage per week was $7 for bindery women, while the highest was $30 for plasterers. Of the total unions, 24 reported the hours of labor as 8 per day, 17 as 9 per day, 4 as 10 per day, while the remainder reported the hours as from 7 to 12 per day.

STRIKES AND LOCKOUTS.—There are given for the year 1907 statistics of 11 strikes, which threw out of employment 1,025 persons (1,024 males and 1 female), with an estimated wage loss of $91,537. Of the 11 strikes, 8 were ordered by organizations and 3 were not; 6 were for increase of wages, 1 was against reduction of wages, and 4 were for other causes; 1 strike was successful, 2 were partly successful, and 8 were unsuccessful. So far as could be ascertained, there was $5,500 given in assistance to those on strike. Of each strike a brief account is given. No lockouts were reported for the year.

NEW HAMPSHIRE.

Seventh Biennial Report of the Bureau of Labor of the State of New Hampshire, 1907–8. L. H. Carroll, Commissioner. 199 pp.

The following subjects are presented in this report: Leading industries, 5 pages; statistics of manufactures, 72 pages; unoccupied manufacturing plants and water-power privileges, 19 pages; manual training, 10 pages; strikes, 2 pages; labor laws, 29 pages, labor organizations, 38 pages.

LEADING INDUSTRIES.—The manufacture of cotton goods is the most important industry in the State. In the 21 establishments reported as manufacturing cotton cloth in 1907 employment was given to 12,167 males, to whom was paid $5,756,157 in wages; 12,901 females, to whom was paid $4,145,321 in wages; 330 children under 16 years of age, to whom $72,242 was paid in wages, and 245 salaried clerks, whose salaries amounted to $406,440. Invested capital amounted to $25,960,703, and goods to the amount of $38,254,160 were produced. Like statistics are given for each of the other 12 leading industries.

STATISTICS OF MANUFACTURES.—For the year 1907 reports were received from 1,762 establishments engaged in 49 specified industries and 62 establishments engaged in other industries, not specified. Tables are presented showing by industries and by location the capital invested, employees by classes, wages and salaries paid, and value of products. The following summary statement shows aggregate figures for the State:

Establishments reporting	1, 824
Capital invested	$119, 653, 209
Value of product	$164, 693, 442

Average number of wage-earners:	
Males	62,568
Females	24,694
Children under 16 years of age	986
Total	88,248
Wages paid:	
Males	$30,048,077
Females	8,305,996
Children under 16 years of age	189,113
Total	38,543,186
Salaried employees	2,180
Salaries paid	$2,481,404

Unoccupied Manufacturing Plants and Water-Power Privileges.—This is a list of the manufacturing plants in the State unoccupied, as well as of water-power privileges, developed and undeveloped, with a statement of the dimensions and condition of the plants, industry for which each was originally intended, and location.

Manual Training.—Under this head several papers by principals of schools and other educators are given, discussing the practical value of manual training in the public schools.

Strikes.—Brief mention is made of one strike occurring in 1908, which was unsettled at the time of making the report.

Labor Laws.—This section reproduces the various laws of the State affecting labor.

Labor Organizations.—This is a list of the labor organizations in the State, with date of organization, membership, names of officers, and dates of meetings of each.

NORTH CAROLINA.

Twenty-first Annual Report of the Bureau of Labor and Printing of the State of North Carolina for the year 1907. H. B. Varner, Commissioner. 344 pp.

This report consists of seven chapters, as follows: Condition of farmers, 80 pages; Condition of the trades, 21 pages; Miscellaneous factories, 87 pages; Cotton, woolen, and knitting mills, 62 pages; Furniture factories, 16 pages; Newspapers of the State, 46 pages; Railroad employees, 15 pages.

Condition of Farmers.—The report on this subject is compiled from returns made by representative farmers residing in different sections of the State. The data is presented, by counties, in five tables, which show condition of land and labor, wages, cost of living, etc., cost of production of principal crops, market price of crops, and profit on production. In all (98) counties labor was reported scarce; 96 counties reported that Negro labor was unreliable, 1 that it was reliable, and 1 that there was no Negro labor; 52 counties favored immigration, 46 opposed it; cost of living was reported as having increased in 97 counties, and in 1 as not having increased. The highest and lowest monthly wages paid for farm laborers in each county were reported, and for men the average of the highest wages so reported was $25.03, and of the lowest $15.32; for women like averages were $15.47 and $10.23, and the average wages of children were $9.39. For all classes of farm labor an increase of wages was reported from 92 counties, 6 reporting no increase.

CONDITION OF THE TRADES.—The data from which the tables presented under this title were compiled were secured from representative men engaged in the various trades considered. These reports from the wage-earners of the State show daily wages and wage changes, working conditions and cost of living, hours of labor, conditions of apprenticeship, etc. Of the wage-earners making returns, 63 per cent reported an increase of wages and 37 per cent no change; 54 per cent made full time and 41 per cent part time; 88 per cent reported cost of living increased and 12 per cent no change; 40 per cent favored an 8-hour day, 10 per cent a 9-hour day, and 45 per cent a 10-hour day; 88 per cent favored fixing a day's work by law and 7 per cent opposed it. The average wages paid per day in the different trades were: Blacksmiths $2, brick masons $2.50, carpenters $2.01, harness makers $1.25, machinists $3.20, miners $1.75, painters $2.44, plasterers $4.50, printers $2.43, textile workers $1.27, and wheelwrights $1.93.

MISCELLANEOUS FACTORIES.—Under this classification the number of factories reporting was 587, of which 523 reported an invested capital of $42,085,790; 568 reported the number of employees as 30,991, and 579 reported the number of persons dependent on them for a livelihood as 92,081. An 8-hour day was reported by 6 factories, a 9-hour day by 7, a 9½-hour day by 4, a 10-hour day by 436, a 10½-hour day by 5, an 11-hour day by 48, a 12-hour day by 69, and a day ranging from 10 to 12 hours in length by 4. An increase in wages was reported by 74 per cent of the factories, no change by 17 per cent, while 9 per cent made no report. Of the adult employees 84 per cent were able to read and write and of the children 87 per cent. The highest daily wages paid was $2.47 and the lowest $0.93. In 69 per cent of the factories wages were paid weekly, in 17 per cent semimonthly, in 11 per cent monthly, in 1 per cent daily, and in 2 per cent by the piece. The tables presented show for each establishment the product manufactured, capital stock, horsepower, days in operation, hours of labor, number of employees, and number of persons dependent on factory, highest and lowest wages, etc.

COTTON, WOOLEN, AND KNITTING MILLS.—The number of mills covered by this presentation is 329, with an aggregate invested capital of $45,807,535. The number of spindles in operation was 2,768,576, of looms 52,272, of knitting machines 5,161, together requiring 114,790 horsepower.

The number of employees reported by 97 per cent of 284 mills (281 cotton and woolen and 3 silk) was 25,353 adult males, 20,221 adult females, and 6,604 children, a total of 52,178. The number of persons dependent upon 83 per cent of these mills was 127,218. Of the adult employees 86 per cent, and of the children 80 per cent, were able to read and write. The average of the highest daily wages (based on the highest wages paid to any employee by each establishment) was $2.56, lowest $0.82, for men; for women the average highest wages were $1.31, lowest $0.67, and for children the average wages were about $0.60. An increase of wages was reported by 87 per cent of the establishments, 7 per cent reported no change, and 6 per cent made no report.

The number of employees reported by the 45 knitting mills was 1,271 adult males, 2,640 adult females, and 777 children, a total of 4,688. The number of persons dependent upon 59 per cent of these mills was 8,992. Of the adult employees 94 per cent, and of the children 93 per cent, were able to read and write. The average hours constituting a day's work was 10. For men the average of the highest daily wages was $2.09, the lowest $0.74; for women the average of the highest daily wages was $1.42, the lowest $0.53, while for children the average daily wages were $0.55. An increase of wages was reported by 68 per cent of the establishments, 18 per cent reported no change, and 14 per cent made no report.

Relative to the employment of children under 12 years of age in the factories, 86 per cent of the employers were opposed to it, while 5 per cent favored it and 9 per cent expressed no opinion; 80 per cent of the knitting-mill employers were opposed to it, while 9 per cent favored it and 11 per cent expressed no opinion.

FURNITURE FACTORIES.—There were 104 furniture factories which reported capital stock, power, class of goods manufactured, wages, hours of labor, days in operation, number of employees, persons dependent on factory, etc. The 104 factories had an aggregate capital of $3,457,767, used 10,880 horsepower, and employed 6,549 wage-earners. The average of the highest daily wages paid adults was $2.39; the lowest $0.91; the average daily wages paid children was $0.55. Of both the adult employees and of the children 88 per cent could read and write. An increase of wages was reported by 93 per cent of the factories, 3 per cent reported no change, and 4 per cent made no report. Relative to the employment of children under 14 years of age, 78 per cent of the employers were opposed to it, while 11 per cent favored it and 11 per cent expressed no opinion.

RAILROAD EMPLOYEES.—In this chapter statistics are presented showing, by occupations, for each railroad reporting, the number of employees and average wages paid. The following table shows the number and average daily wages of persons employed on the steam railroads of the State:

NUMBER AND AVERAGE DAILY WAGES OF RAILROAD EMPLOYEES, BY OCCUPATIONS, 1907.

Occupation.	Number of employees.	Average daily wages.	Occupation.	Number of employees.	Average daily wages.
Station agents	701	$1.43	Other shopmen	1,831	$1.51
Other station men	2,091	1.04	Section foremen	609	1.53
Engineers	763	3.13	Other trackmen	5,440	1.02
Firemen	924	1.44	Switchmen, flagmen, and watchmen	515	1.27
Conductors	660	2.55	Telegraph operators	447	1.91
Other train men	1,947	1.29	Other employees	2,643	1.18
Machinists	500	2.61			
Carpenters	556	1.86			

Resulting from the movement of trains, there were during the year 322 accidents to passengers, 21 fatal and 301 nonfatal; 34 to postal clerks, express messengers, and Pullman employees, all nonfatal; 790 to employees, 53 fatal and 737 nonfatal, and 272 to other persons, 89 fatal and 183 nonfatal, making a total of 163 fatal and 1,255 nonfatal accidents. From other than the movement of trains there were 624 accidents to persons, none of which were fatal.

A presentation is made concerning the operation of each of ten street railways, giving mileage, capital stock, funded debt, gross earnings, operating expenses, income from operation and from other sources, number of passengers carried, and passengers carried per mile of track. A table is also given showing the capitalization, earnings and expenses of the telephone companies doing business in the State, with the number of telephones and the average monthly charge for each.

RECENT FOREIGN STATISTICAL PUBLICATIONS.

CANADA.

Report of the Department of Labor of the Dominion of Canada for the fiscal year (9 months) ended March 31, 1907. 170 pp.

The first of the fourteen sections which comprise this report consists of a general review of the material published during the year in the various issues of the Labor Gazette, a monthly devoted to industrial and labor conditions throughout Canada, and printed in both English and French.

From a statement showing in detail by industries the labor-organization movement in Canada, it appears that in 1904 there were 152 unions formed and 109 dissolved, in 1905 there were 103 unions formed and 101 dissolved, and in 1906 there were 154 unions formed and 85 dissolved. In 1905 in the several Provinces of the Dominion there were 220 employers' associations.

The section of the report devoted to conciliation and arbitration shows that the intervention of the Department of Labor, under the Conciliation Act of 1900, was requested in the settlement of labor disputes involving 900 working people on two occasions during the year 1906–7, and that since the passage of the act in July, 1900, intervention has been requested on 41 occasions.

An account is given of the inquiry by the Royal Commission into the dispute between the Bell Telephone Company and its operators at Toronto.([a])

Since the passage of the Railway Labor Disputes Act, in 1903, there has not been a strike on any of the railroads of the Dominion of such a nature as to seriously affect transportation. During the year 1906–7 there was not even occasion to apply the provisions of the act to a threatened strike.

Notice is given of the important features of the Industrial Disputes Investigation Act, 1907.([b])

During the fiscal year the "fair wages" officers of the department prepared fair-wages schedules for insertion in 150 separate contracts, which were awarded, or were about to be awarded, during the year. Of this number, 53 were in connection with public buildings or works being executed under contract for the department of public works, 84 in connection with contracts or subsidy agreements entered into with the department of railways and canals, 10 for contracts awarded by the department of marine and fisheries, and 3 for insertion in contracts awarded by the commissioners of the Transcontinental Railway. In every case the rates of wages fixed in the fair-wages schedule were based upon what were considered fair and reasonable rates in the localities in which the work was to be undertaken. Since the establishment of the department of labor, in 1900, the fair-wages officers have prepared some 935 fair-wages schedules for public contract work.

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[a] For a digest of the report of this commission see Bulletin of the Bureau of Labor, No. 75, pp. 611–613.

[b] For the provisions of and comments upon this law see Bulletin of the Bureau of Labor, No. 76, pp. 657–740.

During the calendar year 1906 there were 138 labor disputes in Canada, which involved 21,606 working people directly and 4,408 working people indirectly. The loss of time amounted approximately to 490,400 working days. The disputes affected 864 establishments directly and 79 indirectly. The principal causes of disputes were demands for increase in wages and against the employment of particular persons. Of the 130 disputes which were terminated during the year, 67 were settled by negotiations between the parties concerned, 28 by the resumption of work without negotiations, 18 by the employment of other work people in the places of the strikers, 4 by conciliation, 3 by arbitration, and the remainder by other methods. There were 50 strikes which resulted in favor of the employers, 41 in favor of the employees, 23 were compromised, 5 were partly successful for the strikers, and the results of the remaining strikes were indefinite or unknown. During the years 1901 to 1906 there were 715 trade disputes in Canada—104 in 1901, 123 in 1902, 160 in 1903, 103 in 1904, 87 in 1905, and 138 in 1906. Out of the total disputes during the period, the causes of 310 of them related to wages and hours of labor; 350 disputes were settled by negotiations between the parties concerned, and 61 by conciliation and arbitration; 244 disputes resulted in favor of employers, 214 in favor of employees, and 166 were settled by compromise.

There were in Canada during the calendar year 1906, 1,107 fatal and 2,745 nonfatal industrial accidents. Of fatal accidents the greatest number (252) was in the railway service, and of nonfatal accidents the greatest number (562) was in the metal trades. Mining had 119 fatal and 174 nonfatal accidents, while in lumbering there were 119 fatal and 156 nonfatal accidents.

Accounts are given in two sections of the report of the action of the department of labor in reference to false representations to induce or deter immigration to the Dominion and of the administration of the alien labor laws.

GERMANY.

Die Eingetragenen Genossenschaften im Königreich Bayern. Nach dem Stande in den Jahren 1902 und 1903 und mit einer vorläufigen Übersicht über den Stand von Ende 1905. Herausgegeben vom Kgl. Statistischen Bureau. Munich, 1906. 47+83* pp.

The rapid increase in the number of cooperative societies in the Kingdom of Bavaria during the last 15 years led the statistical bureau of that State to make this report on their scope and operations.

In the German Empire in 1902 there were 20,755 cooperative societies with 3,139,519 members; in Bavaria there were 3,433 societies with 349,328 members. The preliminary figures for the end of 1905 show that there were in that year in Bavaria 4,073 societies with 434,145 members. The average membership in Bavaria in 1902 was 102 per society. This figure shows a tendency for the smaller type of society to predominate. In the same year the average membership of societies in other German States was as follows: Prussia, 145; Saxony, 484; Wurttemberg, 157; Baden, 221; Hessen, 138. The ratio of membership to population is as follows: Out of each 100,000 population, the number of members for the whole Empire is 1,809; in Prussia it is 1,567; in Bavaria, 1,621; in Saxony, 3,027; in Wurttemberg, 3,323; in Baden, 3,231; in Hessen, 3,560, and in Alsace-Lorraine, 1,388. The three States of Bavaria, Prussia, and Alsace-Lorraine therefore show a smaller ratio to population than the average for the Empire.

The experience of Bavaria shows that the cooperative movement began in the cities and has extended gradually to the rural districts, and that at present the proportion of members to population is higher in the rural districts than it is in the cities. The development in the rural sections was at first less rapid, largely owing to the unrestricted liability of members. In 1889 the law regulating cooperative societies was revised and permitted limited liability of members, authorized the formation of federations of societies, and required periodical revisions of operations. In addition the Bavarian government took steps to encourage their creation, particularly agricultural societies. The most important of these were the creation of the Bavarian Federation of Cooperative Loan Societies and of the Central Loan Fund, with which only such societies as were members of the federation could affiliate. Recently the Government has encouraged the formation of the Bavarian Handworkers' Cooperative Society and of the Central Fund of the Handworkers' Cooperative Society in Munich. The latter has expended considerable sums in supporting individual societies, such as those for the conduct of supply depots.

On the question of liability of members the returns show that in 1902, of the 3,433 societies, 3,046 societies with 266,545 members had unlimited liability, and 387 societies with 81,779 members had limited liability. On the basis of membership 76.3 per cent of the members had unlimited liability, 23.4 per cent had limited liability, and 0.3 per cent could not be definitely placed in either group. The character of work undertaken has a close relation to the question of the limitation of the liability of the members, as is shown by the fact that the societies with unlimited liability are almost exclusively cooperative loan societies.

The number and membership of the cooperative societies, classified according to their principal objects, in 1902 and 1903, are as follows:

NUMBER, MEMBERSHIP, AND OBJECT OF COOPERATIVE SOCIETIES IN BAVARIA, 1902 AND 1903.

Object of society.	1902.		1903.	
	Number of societies.	Number of members.	Number of societies.	Number of members
Loan societies	2,593	262,800	2,746	283,186
Societies for purchase of raw materials:				
(a) Industrial	13	399	23	645
(b) Agricultural	210	22,000	214	22,780
Retail dealers' societies for the purchase of commodities	5	558	7	728
Societies for procuring machinery:				
(a) Industrial	20	909	21	982
(b) Agricultural	92	2,606	107	2,928
Warehouse, elevator, etc., societies:				
(a) Industrial	10	686	10	686
(b) Agricultural	12	536	13	545
Raw material and warehouse societies:				
(a) Industrial	19	843	24	1,030
(b) Agricultural	5	234	7	316
Productive societies:				
(a) Industrial	8	208	8	216
(b) Agricultural—				
1. Creameries, dairies, etc	228	10,604	279	13,237
2. Other	37	2,152	42	2,588
Societies for procuring and maintaining brood animals	7	884	8	928
Consumers' societies	128	38,302	146	47,356
Dwelling and building societies	37	5,383	36	5,185
Miscellaneous societies	9	324	9	487
Total	3,433	349,328	3,700	383,823

The most prominent feature of the preceding table is the predominance of the loan societies. Of these the agricultural loan societies are by far the most numerous, 2,459 such societies in 1902 having a membership of 192,564, and 2,606 in 1903 having a membership of 212,891. The forms of society next in frequency are the agricultural societies for carrying on productive operations and for the purchase of raw materials. The consumers' societies are fourth in number and second in membership.

The federal law of 1889 regulating cooperative societies requires them to submit their operations and financial condition to an examination at least once every 2 years. This examination must be made by an expert accountant who may not be connected with the society. To meet this requirement the societies have organized federations for the employment of expert accountants to conduct these examinations. In 1902 there were 15 such federations legally authorized by the Government to conduct this work. Only 15 per cent of the societies were not affiliated with these federations at this date.

The relation of the individual members to the total liability of the society is an important feature of the cooperation problem. According to the law on cooperative societies the liability of each member is equal to his share in the society, and a limit must be placed by the constitution on the amount of stock held by any one person. The statistics for Bavaria show that in 1902 the highest individual liability was 10,000 marks ($2,380) in the case of 1 society; 5,000 marks ($1,190) for 3 societies; 4,000 marks ($952) for 1 society; 3,000 marks ($714) for 1 society; 2,500 marks ($595) for 1 society; 2,000 marks ($476) for 5 societies; 1,500 marks ($357) for 1 society, and 1,200 marks ($285.60) for 3 societies. These are the highest ranges and the others grade down to very small amounts. The class of business conducted by the societies also influences the range of liability of the members. Thus in the case of loan societies with limited liability there was a tendency to have shares of larger amounts, as, for instance, shares and corresponding liability of 1,000 marks ($238) each. On the other hand, in the case of the societies conducting retail stores, there was only one instance of the shares being 200 marks ($47.60), all the others being less than 50 marks ($11.90) each.

The formation of federations of cooperative societies was made possible by that section of the law of 1889 which permitted societies to be formed with limited liability. Previous to that date members of societies objected to the creation of federations because the rule requiring unlimited liability would lay upon them possible obligations of larger amounts than they cared to be responsible for. On December 31, 1902, there were 15 such federations; 5 of them were composed of loan societies; 2 were composed of agricultural, and 1 of industrial societies for the purchase of raw materials, and 7 were composed of societies for the marketing of agricultural products.

An appendix to the report shows the preliminary statistical data for the year 1905.

Die Arbeits- und Lohnverhältnisse in den städtischen Betrieben 1906. Mittheilungen des Statistischen Amts der Stadt Magdeburg. Magdeburg, 1906. 74 pp.

This volume presents the facts concerning the conditions of employment and the wages of the employees of the city of Magdeburg. The report states the contract of employment, terms upon which employees are engaged, methods of dismissal, of furlough, etc. The hours of labor by the day, the duration of night work, the regulations for overtime, Sunday work, etc., for the various classes of occupations are given. The methods of wage payments, time wages, piece wages, payments in kind, etc., are stated in detail. The provisions for sickness, accident, invalidity, and death are specified. Statistical tables on these subjects are also given.

GREAT BRITAIN.

Annual Report of the Chief Inspector of Factories and Workshops for the year 1907. Report to the Secretary of State for the Home Department. xliii, 321 pp.

At the end of the year 1907 there were upon the registers of the factory department 107,321 factories, 7,210 laundries (with and without power), and 142,662 workshops, or a total of 257,193 establishments, an increase over 1906 of 2,004 establishments. The works under inspection did not include docks, warehouses, buildings, etc., or home-work premises. The number of persons employed in factories, including laundries with power was (approximately) 4,750,000, and in workshops, including laundries without power, 750,000.

For purposes of inspection the United Kingdom is divided into five inspection districts, each under a superintending inspector, as follows: Southern division, midland division, northeastern division, northwestern division, and the Scotland and Ireland division. The report of each supervising inspector comprises for his district an account of the organization of the working staff and the scope of the work of inspection; complaints from officials, operatives, and others respecting sanitation, safety measures, hours of labor, illegal employment, etc.; industrial developments and state of trade in the district; sanitary conditions and improvements; industrial accidents; safety devices, their efficiency and defects, etc.; industrial poisoning (anthrax, arsenic, mercury, and lead poisoning, etc.); dangerous trades; employment and hours of labor, especially relating to children and women; holidays, overtime, half time, night work, and meal times; the employment of children as half timers and of those not exempt from school; action of the local sanitary authorities in connection with the factory department; administration of the law relating to particulars for piecework; operation of the truck acts; prosecutions for violations of the factory laws; inquest notices, etc. In addition there are reports from the superintending inspector for the dangerous trades, the principal lady inspector, the inspector of textile particulars, the electrical inspector, and the medical inspector. Special reports are also given on the manufacture of shuttles from African box-wood, on lace dressing, on shipbuilding accidents, and on the manufacture of matches. Tables presenting in detail and in summary form statistics pertaining to the various features of factory and workshop employment accompany the inspection reports.

The establishments added to the registers of the factory department during 1907 numbered 28,445 (510 textile and 8,838 nontextile factories, 274 laundries with power and 528 without power, and 18,295 workshops), while those of the different classes removed from the registers numbered 26,441, resulting in a net gain in the establishments added of 0.8 per cent.

During 1907 there were 124,325 industrial accidents reported, 80,847 being reported to inspectors only, and 43,478 to certifying surgeons. Those reported to inspectors only were nonfatal in result and of a minor character. In the table following the accidents reported to certifying surgeons are shown by degree of injury (fatal and nonfatal) and by sex and age:

ACCIDENTS REPORTED TO CERTIFYING SURGEONS, 1907.

Sex and age of persons injured.	Fatal accidents.	Increase over 1906.	Nonfatal accidents.	Increase over 1906.	Total accidents.	Increase over 1906.
Males	1,157	59	37,129	6,748	38,286	6,807
Females	22	4	5,170	971	5,192	975
Total	1,179	63	42,299	7,719	43,478	7,782
Adults (over 18)	1,071	60	33,148	5,835	34,219	5,895
Young persons (13 to 18)	108	4	8,962	1,846	9,070	1,850
Children (12 to 14)	....	[a]1	189	38	189	37

[a] Decrease.

In the textile industries there were 6,542 accidents, of which 95 were fatal and 6,447 nonfatal; in the nontextile industries there were 33,768 accidents, of which 755 were fatal and 33,013 nonfatal; and in laundries, docks, buildings under construction, etc., there were 3,168 accidents, of which 329 were fatal and 2,839 nonfatal. In the textile industries the greatest number of accidents was in cotton spinning and weaving, with 49 fatal and 3,899 nonfatal accidents, followed by wool, worsted, and shoddy, with 30 fatal and 1,461 nonfatal accidents; in the nontextile industries the greatest number of accidents was in shipbuilding, machines and machinery, and the metal trades, with 442 fatal and 21,021 nonfatal accidents.

The cases of industrial poisoning reported in 1907 numbered 653, of which 40 resulted fatally. Of the total 619 were cases affecting adults, of which 39 were fatal, and 34 were cases affecting young persons and children, of which 1 was fatal. There were 578 cases of lead poisoning, of which 26 were fatal, 7 cases of mercury poisoning, 1 case of phosphorus poisoning, 9 cases of arsenic poisoning, of which 2 were fatal, and 58 cases of anthrax, of which 11 were fatal.

The report of the superintending inspector for dangerous trades shows that during 1907 there were in the United Kingdom, where particular dangers arise and special precautions are necessary, 18,697 industrial establishments operating under special rules and regulations.

Generally the employment of children as half timers is becoming less frequent, though in certain towns the numbers have increased, especially in districts largely devoted to the cotton industry.

Compensation for Industrial Diseases. Report to the Secretary of State for the Home Department. 1908. 4+73 pp.

This document is a supplementary report of the committee appointed to inquire and report what diseases and injuries, other than injuries by accident, were due to industrial occupations, were distinguishable as such, and could properly be added to the diseases enumerated in the third schedule of the Workmen's Compensation Act, 1906.

In the main report of the committee it was stated, with respect to the addition of glass workers' cataract to the schedule, that the question was one in which statistics were of the first importance. In the present report is given the results of an investigation made by the medical member of the committee with a view to determining the incidence of cataract among glass workers generally. He examined the eyes of 513 persons exposed to furnace glare in glass works and, for comparison, of 278 persons not so exposed. He found that all classes of glass-furnace workers appeared to suffer, and that among them between the ages of 30 and 40 opacities of one kind or another in the lens were about five times, between 41 and 50 about twice, and at 51 years of age and over more than three times as frequent as in those engaged in other work.

After devoting careful consideration to the question the conclusion was arrived at that if glass workers' cataract were added to the schedule in the same manner as other industrial diseases, the work people would lose more than they would gain, as employers would be likely to impose a medical examination of the eyes and those who revealed symptoms of opacity in the lens would find their chances of obtaining employment seriously prejudiced. It was recommended therefore that the disease be added to the first column of the schedule of industrial diseases for which compensation may be claimed; that "Processes in the manufacture of glass involving exposure to the glare of molten glass" be added to the second column; but that the compensation should be made payable only in cases where an operation is undergone and for a period not exceeding six months. The period is thus limited to the time immediately preceding and succeeding the operation. The operation for the removal of cataract, it is stated, is attended by practically no danger.

Consideration was also given to the disease known as "telegraphists' cramp." This disease was referred to as an occupational neurosis or fatigue spasm. It shows itself by the production of jerkiness and illegibility in operating and a disability for work limited to the particular movements involved. The committee was of the opinion that the disease should be considered specific to the employment and that it should be added to the schedule as a subject for compensation.

Report from the Select Committee on Home Work, August 8, 1907. 1908. x, 290 pp.

This report was made August 8, 1907, and presents the evidence taken before a committee of the House of Commons appointed June 4, 1907, "to consider and report upon the conditions of labor in trades in which home work is prevalent, and the proposals, including those for the establishment of wages boards and the licensing of work places, which have been proposed for the remedying of existing abuses." The committee in its report makes no comment on the evidence and recommends that a committee on the same subject be appointed at the next session of Parliament.

WAGES BOARDS.—Much valuable testimony was brought out by the questions of the committee. Among others, Mr. G. R. Askwith, a barrister who had acted as an arbitrator, umpire, and conciliator during a number of years in many trades disputes, appeared in favor of the establishment of wages boards. This witness believed that difficulties would be met with in the establishment of minimum rates of payment, but that they were difficulties which a practical wages board could overcome. The cost of such boards was not considered by him to be a serious factor in comparison with the volume of business done by the interested trades and leaving out of consideration the cost of strikes.

LICENSING.—Another witness who gave valuable testimony was Miss Clara Collett, an official of the Board of Trade, the senior investigator of women's industries. During the previous year, under her direction over 1,700 home workers in the making of women's clothing were visited, principally in the north of Ireland and in London. This witness was of the opinion that the proposal to license work places would be of little benefit to the workers. A refusal to issue a license for sanitary reasons would only result in depriving the worker of possible earnings without improving conditions. According to her testimony, the majority of home workers live in well-kept houses and do not need the sanitary inspection. They are not well to do from the standpoint of the middle classes, but they feel that there are a great many people poorer than themselves. In London 60 per cent of the home workers visited were married women, hence not entirely dependent upon their earnings. Such persons will not work for the low rates that a widow with two or three children would accept. According to the witness, the cases where the earnings are very small and the conditions distressing are greatly in the minority. Numerically there may be many such cases, but these, when particularly noticed, produce an exaggerated impression.

Under the Factory and Workshop Act, 1901, a room in which as few as two persons are employed may be designated a "tenement workshop." The statement that there were "very few foreign workers amongst the home workers" is therefore hardly comparable with American conditions.

The number of women and girls registered under the Factory and Workshop Act is about 400,000. This number deducted from the number shown by the census as employed in the clothing trades gives 300,000 as the approximate number of women and girls engaged in the clothing trades and not in the factories and workshops.

Report from the Select Committee on Home Work, July 22, 1908. 1908. xlix, 216 pp.

This document contains the report of a committee of the House of Commons, appointed February 11, 1908, in accordance with the recommendation of the committee on home work which reported in August, 1907. The duties of the committee of 1908 as outlined in the order of reference, were the same as those of the committee appointed in the preceding year. The present report was made July 22, 1908.

Home workers in Great Britain are divided into three main groups. In the first and second are those who are under the protection of the Factory and Workshop Act, by reason of their employing either members of their own families or outsiders. The third group consists of those who employ no assistants, but undertake work for others and do it in their own homes. It is with this group that the committee was mainly concerned. In this group are those women who are dependent upon their work for support, those who obtain outside work only when their husbands are out of employment, and the wives and daughters of men in regular employment who wish to increase the family income.

The committee was convinced that the earnings of a large number of people—mainly women who work in their homes—are so small as alone to be insufficient to sustain life in the most meager manner, even when they toil hard for extremely long hours. The consequence is that when those earnings are their sole source of income the conditions under which they live are often not only crowded and insanitary, but altogether pitiable and distressing. More or less similar conditions are stated to prevail, not only in all the great countries on the continent of Europe, but also in the United States and in Australasia.

WHY THEIR EARNINGS ARE SMALL.—The reasons why the earnings of many home workers are small are many and varied. Among them are the following:

Much of the work is sewing, which requires but little previous training and can be done at irregular hours and in the intervals of household duties. Since those persons who are quickest, most regular, and most reliable are given preference by employers when selecting factory workers, those who are slow, owing to age, feeble health, inexperience, incompetence, or lack of power, energy, or disposition to work, drift into home work to earn a livelihood. These conditions and influences tend to make the supply of home workers very large and elastic.

A large proportion of the home workers are engaged in the production of articles in competition with machinery, and the cost of making the articles by machinery fixes the rate which can be paid to them. If the same rate per article be paid to the two classes of workers, the home worker will be able to earn only one-fourth as much per hour as the factory worker. In such cases, the trouble is not that the rate of pay is unduly low, but that the home worker is handicapped by her conditions and appliances. Many articles made by the home workers are such that a very large number of those who require them can make them for themselves. Unless the price at which these articles are sold is low, those who would otherwise be the purchasers will buy the materials and make the articles at home. In some classes of work the competition of foreign-made articles was said to be an important factor in depressing the price paid.

In many trades middlemen intervene between the factory and the home worker, making a charge for distributing and collecting the work, so that the worker does not obtain even the low price paid.

Since the women home workers are very poor and helpless and work separately, they are unorganized. Hence they can not act together to promote common interests and are powerless to resist the tendency to reduce rates, caused by the keen competition of the employers.

The imposition by law of conditions and obligations upon owners and occupiers of factories and workshops tends to encourage employers to resort to home work in order to avoid compliance with the requirements of Parliament and the visits and supervision of the inspectors appointed to enforce them. The more numerous and stringent those regulations become the greater is the temptation to evade them by employing persons who work under conditions to which they do not apply.

Provisions of the Existing Law Regarding Home Work.—Home workers' premises come under the operation of the general law of public health relating to sanitation, etc., of dwellings and under special provisions in the Factory and Workshop Act, 1901. The most important is that contained in section 108. This gives power to the district council to prohibit the giving out of work to be done in premises which are injurious or dangerous to the health of the persons employed therein. For the purpose of furnishing the information necessary to enable the local authority to exercise this power persons giving out work are required to keep a list of all persons to whom work is given out, and to send copies of such lists semiannually to the local authority. In practice these lists are found to be usually incomplete and furnish no sufficient indication of the number of outworkers in any trade.

An important provision in connection with the payment for work is contained in the "Particulars" section of the Factory and Workshop Act, 1901. This provision, the enforcement of which is placed upon the inspectors of factories, is intended to secure to the outworker information beforehand as to the price he is to receive and to protect him against arbitrary alterations or reductions.

The committee was of the opinion that the provisions of existing law had failed to produce any real amelioration of the condition of home workers, and that legislation of a far-reaching character was required.

Australasian Experience.—Careful attention was given to the report of a commissioner appointed by the home department to investigate the working of the systems adopted in Australia and New Zealand. This report made it clear that, apart from the valuable suggestions which are to be derived from the application of general principles and novel legislation to widely different conditions, there was not much information or guidance with regard to the difficulties which surround the problem of home work to be derived from the conditions, legislation, and experience of these countries. In the first place, there the home worker is a very small element of the population. Secondly, the demand for women workers exceeds the supply. Lastly, the various wages and other boards have left the home workers almost entirely untouched.

Suggested Remedies.—The two suggestions which attracted the most attention were:

That it should be made illegal to give work to an outworker unless she had previously obtained a license from a factory inspector, authorizing her to do work for a specified time in the premises named in the license.

That in certain trades a wages board, consisting of representatives of employers and working people and a neutral chairman, should be established, with power to fix the minimum rate of wages to be paid, the payment of a lower rate to be a punishable offense.

LICENSING.—Owing to the enormous increase in the number of inspectors that would be necessary should the licensing of the workers be required and to the difficulty that the poor might experience in obtaining such license, the committee did not approve of the first suggestion. It was recommended that home workers be required to secure certificates of registration from the local authorities, such certificates to be issued without fee or condition, with the aim of obtaining complete and accurate registration.

WAGES BOARDS.—The second suggestion was considered by the committee to go to the root of the matter—the poverty, the miserably inadequate income of so many of the home workers being the great difficulty of the situation. It was recognized that the difficulties which such boards would have to surmount would be very great. There is in some trades an enormous number and complication of articles, processes, subdivisions, and patterns. Then there are the constant changes, especially in those trades where fashion is the dominating factor, and different employers have a vast number of different methods and designs. Any attempt to fix prices for every process, size, pattern, and variation would appear to be almost interminable. There is also the difficulty of submitting new ideas and designs to rival employers who may be members of the board. The question also arises, Should the piece rate be based upon the time in which a worker can complete the article in a factory with modern machinery or is it to be based upon the time taken in the conditions with which he works at home?

Much importance was attached to the experience and opinion of one who had served for many years as arbitrator and conciliator in trade disputes of various kinds. This gentleman was of the opinion that "wages boards are workable and practicable, and would be beneficial, and ought to be tried."

Upon the question of the general policy of Parliament providing for the fixing of a minimum rate of payment for work the committee was of the opinion that it was quite as legitimate to establish by legislation a minimum standard of remuneration as it was to establish such a standard of sanitation, cleanliness, ventilation, air space, and hours of work. It was considered that it would be better that any trade which could not exist if such a minimum of decent and humane conditions were insisted upon should cease. It was believed that the establishment by law of minimum rates of payment for such classes of workers as are unable to obtain for themselves such rates of payment as may be reasonably regarded as the lowest upon which they can exist would result in benefit to employers, work people, and the general public.

RECOMMENDATIONS AS TO WAGES BOARDS.—The committee recommended that each wage board should fix a general minimum rate of time payment for an average home worker in the trade for which it acts, and also for any branch or process in the trade for which a different rate might be desirable, such rate to be not less than the general minimum rate. The boards should also fix minimum piece rates for any work done by home workers, these piece rates to be such as would enable an average worker to earn not less than the minimum time rate.

SUMMARY OF CONCLUSIONS.—The committee reported that it was desirable:

(1) That there should be legislation with regard to the rates of payment made to home workers who are employed in the production or preparation of articles for sale by other persons.

(2) That such legislation should at first be tentative and experimental, and be limited in its scope to home workers engaged in the tailoring, shirt making, underclothing, and baby-linen trades, and in the finishing processes of machine-made lace. The home secretary should be empowered, after inquiry made, to establish wages boards for any other trades.

(3) That wages boards should be established in selected trades to fix minimum time and piece rates of payment for home workers in those trades.

(4) That it should be an offense to pay or offer lower rates of payment to home workers in those trades than the minimum rates which had been fixed for that district by the wages board.

(5) That the delivery and collection of work done at home should be done by persons in the direct employ and pay of the employer. Where that was not done, the amount which a worker could earn in a specified time should be calculated on a basis which included the time spent in fetching and returning the work as time occupied in doing the work.

(6) That all home workers who are employed by other persons in producing or preparing articles for sale should be required to register their name, address, and class of work at, and receive a certificate of such registration from, the offices of the local authority, and that the keeping of accurate outworkers' lists by employers should be strictly enforced.

(7) That it should be an offense for any person to employ any home worker to produce or prepare any articles for sale by another person unless the worker produce a certificate of registration.

(8) That the provisions of section 9 of the Public Health Act, 1875, with regard to factories and workshops which are not kept clean or are ill-ventilated or overcrowded should be extended to rooms in which home work is done, and power should be given to sanitary

and factory inspectors to inspect them and secure the enforcement of the law.

(9) That the full protection of the Truck Act should be secured to home workers.

The Wages Boards and Industrial Conciliation and Arbitration Acts of Australia and New Zealand. Report to the Secretary of State for the Home Department. 226 pp.

In this volume is contained the report of Mr. Ernest Aves, a commissioner appointed for the purpose of conducting an investigation into "(1) the system of wages boards which have been established in some of the Australian colonies; their working; the measure of success attained, with reference especially to the prevention of sweating; and the conditions which have made success possible; (2) the systems of compulsory arbitration in industrial disputes which have been established in Australia and New Zealand; their working; the measure of success attained; and the conditions which have made success possible; (3) the working of the acts for the regulation of hours of employment in shops in force in Australia and New Zealand."

WAGES BOARDS.—In Victoria, which may be taken as representative of the States having wages boards, 49 special boards were found to have been established. They consisted of representatives of both employers and work people, appointed for three years, and determined questions of wages, overtime, hours, and the proportion of "improvers" to adults, in their respective trades.

With respect to the fear that the minimum wage rate established by the boards might become the standard rate in each trade, the commissioner states that "absolute uniformity of rating in any occupation appears to be quite the exception."

The replies received upon forms circulated among both employers and work people indicate a widespread feeling that under the wages boards general conditions have improved, but that the boards have had no appreciable effect on the quality or the price of the product or on the regularity or certainty of employment. There is also a widespread belief that the boards have been instrumental in abolishing, or at least in modifying the evils of "sweating."

This experience, however, has been for the most part confined to the clothing trades. These trades have been carried on in a small, rich, highly centralized, and comparatively homogeneous community, free, save in isolated instances, from the extremes either of poverty or wealth. They have flourished during times of increasing prosperity, under conditions in which labor has frequently been scarce, and in markets that are protected both by legislation and by geographical position. The experience of Victoria, valuable and interesting though it is, is thus not conclusive, if only because too brief, too simple, and too exclusively connected with an era of prosperous trade.

INDUSTRIAL CONCILIATION AND ARBITRATION.—In New Zealand registered societies consisting of two or more employers or of seven or more workers may bring any dispute arising as to industrial matters before a board of conciliation. These boards are composed of both employers and workmen engaged in the industry in which the dispute arises. The board of conciliation may refer the case direct to the arbitration court; or after taking evidence the board may make recommendations which if accepted by the parties have the force of law. If the recommendations are ignored for a month they become law, but if rejected the dispute is carried to the court of arbitration. The decisions of this court are binding and if within the scope of the law are without appeal. Many cases have come before the court, and those are given in which increased wages and (in most cases) shorter hours have been fixed.

It is stated, however, that it is too soon to draw final conclusions as to the effect of the act—on efficiency, alike of employers and employed; on industrial character; on the suitability of choice exercised by the young in the selection of a trade; on industrial training; on the stability of industrial conditions; and, perhaps above all, on the question of relationship between employers and employed.

In an appendix are laws and decisions of the courts upon the subjects treated, specimen determinations and awards, copies of forms circulated, and replies received.

ITALY.

La Donna nell' Industria Italiana. 1905. Ufficio del Lavoro, Ministero di Agricoltura, Industria e Commercio. 59, 157 pp.

This report, issued by the Bureau of Labor of the Italian Department of Agriculture, Industry, and Commerce, relates to the employment of women in industry.

The present report, which bears a close relationship to a preceding one on maternity funds, consists of two parts, the first of which contains a text analysis and statistical summaries of the information presented, and the second part consists of detailed statistical tables.

The material used in the preparation of this report was transmitted to the department by the prefects of the various provinces to whom employers of women and children are required to make annual returns in conformity with the law of June 19, 1902, regulating the employment of women and children.

During the year ending June 30, 1904, returns were made by 14,150 establishments. The number of males and females of various ages employed in these establishments, with the percentage of total employees found in each group, was as follows:

NUMBER AND PER CENT OF MALES AND FEMALES EMPLOYED IN 14,150 ESTABLISHMENTS MAKING RETURNS DURING THE YEAR ENDING JUNE 30, 1904, BY AGE GROUPS:

Age.	Males.		Females.		Total.	
	Number.	Per cent of total employees.	Number.	Per cent of total employees.	Number.	Per cent of total employees.
Under 12 years	4,379	0.5	12,185	1.5	16,564	2.0
12 and under 15 years	37,419	4.5	69,926	8.5	107,345	13.0
15 and under 21 years	79,975	9.6	151,506	18.3	231,481	27.9
21 years and over	293,142	35.4	180,619	21.7	473,761	57.1
Total	414,915	50.0	414,236	50.0	829,151	100.0

From the foregoing table it will be seen that in the establishments reporting 15 per cent of the employees were below the age of 15 years. Of these one-third were males and two-thirds were females. Among the employees 15 and under 21 years of age the ratio was 9.6 males to 18.3 females. For employees 21 years of age and over the ratio was 35.4 males to 21.7 females. The number of males of all ages employed in these establishments was slightly in excess of the total number of females.

In the textile industry, which furnished 49 per cent of the employees reported, the number of persons of both sexes below the age of 15 years equaled 19.5 per cent of the total number of employees. The ratio between the two sexes was 2.2 males to 17.3 females. For the different age groups represented in the textile industry the proportion of males and females was as follows: Below 12 years, 0.2 males to 2.7 females; 12 to 15 years, 2.0 males to 14.6 females; 15 to 21 years, 4.1 males to 29.4 females; 21 years and over, 14.9 males to 32.1 females; all ages, 21.2 males to 78.8 females.

In the table which follows a classification is made, by industry and earning capacity, of 38,273 females below the age of 15 years employed in 1,906 establishments on November 30, 1903, the percentage of such persons among all females employed being shown for each industry:

CLASSIFICATION, BY INDUSTRY AND EARNING CAPACITY, OF 38,273 FEMALES UNDER FIFTEEN YEARS OF AGE EMPLOYED AT GAINFUL OCCUPATIONS AND PER CENT OF TOTAL FEMALE EMPLOYEES REPORTING.

Industry.	Establishments.	Female employees under 15 years of age.		Per cent of females under 15 years of age earning daily—			
		Number.	Per cent of total female employees reporting.	50 centesimi ($0.0965) and less.	51 to 75 centesimi ($0.0984 to $0.1448).	76 to 100 centesimi ($0.1467 to $0.1930).	101 centesimi ($0.1949) and more.
Agriculture	12	37	5.8	16.2	81.1	2.7	....
Extraction of minerals and manufacture of mineral products	56	210	11.1	35.7	48.1	14.8	1.4
Metal working and machine construction	61	245	14.8	53.9	29.8	14.3	2.0
Work in wood, straw, and similar materials	39	231	12.9	42.0	38.5	16.9	2.6
Chemical products	66	279	5.6	44.8	36.2	17.6	1.4
Paper, printing, and publishing	195	568	11.0	37.0	48.4	13.9	.7
Textiles	1,223	35,239	23.1	34.0	49.5	14.0	2.5
Clothing, hides, etc	160	780	12.0	60.8	32.2	6.0	1.0
Food products	58	168	12.1	40.5	44.1	14.3	1.1
Tobacco	16	283	2.2	31.8	68.2	....	....
Other industries	20	233	18.5	52.4	40.8	6.8	....
Total	1,906	38,273	20.0	34.9	48.9	13.8	2.4

Of the 38,273 female employees below the age of 15 years shown in the table it will be observed that nearly 35 per cent earned 50 centesimi ($0.0965) and less per day. The number earning from 51 centesimi ($0.0984) to 100 centesimi ($0.1930) per day constituted 62.7 per cent of the total number, while the number of those whose earnings amounted to 101 centesimi ($0.1949) and more was 2.4 per cent of the total.

The following table shows, with slight modifications, similar statistics for 197,482 females 15 years of age and over:

CLASSIFICATION, BY INDUSTRY AND EARNING CAPACITY, OF 197,482 FEMALES 15 YEARS OF AGE AND OVER EMPLOYED AT GAINFUL OCCUPATIONS ON NOVEMBER 30, 1903.

Industry.	Establishments.	Females 15 years of age and over.	Per cent of females 15 years of age and over earning daily—						
			50 centesimi ($0.0965) and less.	51 to 75 centesimi ($0.0984 to $0.1448).	76 to 100 centesimi ($0.1467 to $0.1930).	101 to 150 centesimi ($0.1949 to $0.2895).	151 to 200 centesimi ($0.2914 to $0.3860).	201 to 250 centesimi ($0.3879 to $0.4825).	251 centesimi ($0.4844) and over.
Agriculture	25	859	0.2	59.1	34.5	5.6	0.6	....	....
Extraction of minerals and manufacture of mineral products	76	1,860	2.5	22.9	33.0	29.7	7.6	2.9	1.4
Metal working and machine construction	100	1,953	2.5	9.0	25.4	49.0	10.5	2.9	.7
Work in wood, straw, and similar materials	64	2,188	4.0	11.4	34.7	39.9	8.1	1.6	.3
Chemical products	88	5,662	2.4	5.8	20.0	48.0	20.3	3.0	.5
Paper, printing, and publishing	305	5,835	5.7	19.8	27.8	36.2	7.8	2.3	.4
Textiles	1,758	155,150	1.1	11.1	30.9	43.7	10.0	2.4	.8
Clothing, hides, etc.	264	8,585	5.5	8.7	19.3	37.1	17.8	7.9	3.7
Food products	91	1,691	4.3	10.7	27.1	33.4	21.5	2.8	.2
Tobacco	16	12,577	.6	.8	.9	12.7	52.9	29.3	2.8
Other industries	22	1,122	6.4	9.5	9.6	25.8	28.3	13.0	7.4
Total	2,809	197,482	1.6	10.7	28.0	40.7	13.4	4.5	1.1

From the returns submitted by 2,809 establishments a table was prepared which shows, by industries, the percentage of births occurring among 191,947 women employees of those establishments during the year ending November 30, 1903. In this table, which is reproduced in part herewith, the actual number of women 15 and under 55 years of age employed during the year has been replaced by the computed number of full-time workers required to do the same amount of work in the time specified. The latter, and not the actual number of employees, forms the basis of the computations.

PERCENTAGE OF CHILDBIRTHS AMONG WORKING WOMEN IN VARIOUS INDUSTRIES FOR THE YEAR ENDING NOVEMBER 30, 1903.

Industry.	Establishments.	Working women considered.		Per cent of married women in computed number of full-time workers.	Childbirths per 100 full-time workers.			
		Actual number.	Equivalent (computed) number of full-time workers.		15 to 20 years of age.	20 to 35 years of age.	35 to 55 years of age.	Of all ages.
Agriculture	25	836	555	34.8	0.6	11.9	5.1	7.4
Extraction of minerals and manufacture of mineral products	76	1,806	1,581	21.3	.2	4.4	1.3	2.1
Metal working and machine construction	100	1,938	1,540	21.6	.2	8.3	1.4	4.4
Work in wood, straw, and similar materials	64	2,162	1,792	28.8	.8	9.3	1.1	4.7
Chemical products	88	5,565	5,017	42.9	.7	12.6	5.1	7.8
Paper, printing, and publishing	305	5,568	4,729	33.6	.5	8.4	3.1	4.5
Textiles	1,758	152,225	137,416	24.0	.2	7.5	2.9	3.8
Clothing, hides, etc	264	8,481	6,925	29.9	.6	9.7	4.0	5.6
Food products	91	1,658	1,289	34.6	.4	6.0	1.1	3.3
Tobacco	16	10,632	10,466	59.4	3.3	17.6	5.1	10.4
Other industries	22	1,076	839	59.0	....	8.2	2.8	5.3
Total	2,809	191,947	172,149	27.5	.3	8.4	3.4	4.5

L' Industria dei Fiammiferi Fosforici in Italia e la Lotta contro il Fosforismo. 1905. Ufficio del Lavoro, Ministero di Agricoltura, Industria e Commercio. 44 pp.

This report relates to the match industry of Italy and was compiled primarily for the use of the Italian delegates to the international conference for the legal protection of working people, held in Berne, Switzerland, May 8 to 18, 1905.

The volume comprises two parts. In the first part is given a history of the match industry in Italy from the introduction of the lucifer match, about 1830, to the present time. This is followed by tables showing the total production, importation, exportation, and consumption of the several kinds of matches for the years 1896–97 to 1903–4. Figures are also presented showing, by years, the quantity of wood splints and of phosphorus imported into the Kingdom during the period from 1888 to 1904.

A chapter on employees and conditions of labor shows, by Provinces, the number of match factories in operation during the year 1903–4, the days of operation, the hours of labor per day, and the average wages paid. Of 60 establishments for which the number of days of operation in 1904 was reported, 18 factories, employing 909 persons, worked 300 days and more; 25 factories, with 3,410 employees, worked from 280 to 298 days; and 17 factories, having 429 employees, were in operation 275 days and less.

The number of hours of labor per day was reported for 73 establishments. In 49 of these, in which were employed 5,058 persons, or nearly 94 per cent of all persons employed in the industry, the daily working time ranged from 10 to 11 hours. In one factory, with 10 employees, the hours were 11½ per day, while in 4 factories, with 34 employees, a maximum of 12 hours per day was reported. The number of establishments in which the daily working hours were 9½ and less was 19, with 282 employees. A detailed tabular statement shows for the different Provinces the average daily wages paid male and female employees belonging to various age groups.

The second part of the report is devoted to a discussion of the harmful effects upon the health of the working people which result from the inhalation of phosphorus fumes during the various processes employed in the manufacture of matches. A bibliography of works relating to the subject of phosphorus poisoning and other trade diseases is given, as are also certain statistics concerning the match industry of various countries. This is followed by a brief description of the materials which enter into the composition used in the manufacture of matches in the different countries and of the legislative measures taken for the protection of the working people in this industry.

Among the provisions suggested for lessening the evils of phosphorus poisoning are the following:

1. The forbidding of children and minor females to be employed at preparing the paste, dipping the heads, working in the exsiccators, or filling boxes and making up first packages.
2. A limitation of the hours of labor.
3. The complete isolation of the rooms in which the more unhealthy operations are carried on, in order that the toxic gases may not invade the other parts of the building.
4. The provision of larger workrooms, in order to obtain a greater supply of respirable air with a minimum percentage of vapor or irrespirable gas.
5. The procuring of a thorough artificial ventilation of workrooms.
6. The prescribing of a maximum limit of 38° C. (100° F.) of temperature in the exsiccators, in order to prevent an excessive evaporation of phosphorus.

7. The daily cleaning of the floors, machines, and crucibles in which the chemical operations are performed, with renewal of the paint on walls every six months.

8. The furnishing of working clothes to employees, with the obligation that they change their garments in dressing rooms amply provided with facilities for washing the hands and face.

9. The prescribing of a maximum limit for the percentage of yellow phosphorus employed in the preparation of the paste for match heads.

10. The diffusion of vapors of turpentine through atmosphere charged with considerable quantities of phosphorus gas.

11. A requirement that employees rinse the mouth with dentifrice or a solution of permanganate of potash, furnished at the expense of the proprietor of the establishment.

12. A requirement that upon the opening of all new plants or modifications of existing establishments, the new features, or such as are departures from the practices hitherto existing, be subjected to the examination of the inspector of industry, to whom is conceded the right to make suggestions and impose regulations with regard to hygienic conditions.

13. Periodic medical visits to employees, with the obligation upon employers not to put at work persons predisposed to phosphorus poisoning or dental caries, and to remove sick persons.

14. A requirement that physicians report cases of necrosis and of phosphorus poisoning.

15. The provision of security against fire.

16. The provision of security against accidents.

The substitution of red or amorphous phosphorus for the variety in common use is also recommended.

The report concludes with a statement of what has been accomplished in the way of curtailing the use of yellow phosphorus in other countries and of the probable effects which would follow the prohibition of its employment in Italian industries. An appendix contains a brief summary of the proceedings of the international conference for the protection of workingmen held in Berne, Switzerland, May 8 to 18, 1905.

SPAIN.

Preparacion de las Bases para un Proyecto de Ley de Casas para Obreros. Casas baratas.—Published by Instituto de Reformas Sociales. Seccion primera. Madrid, 1907. 459 pp.

The Spanish Institute of Social Reforms, which includes the functions of a bureau of labor, approved, on April 27, 1908, a draft of a bill for the encouragement of the building of cheap and hygienic workingmen's dwellings and of their ownership by the wage-earners. The text of this draft is published in the Boletin del Instituto de Reformas Sociales for May, 1908. This draft is based upon a very exhaustive investigation of the whole problem of the housing of wage-earners, the results of which are published in the present report prepared by the " first " or " economic " section of the institute. This report represents a very comprehensive study and analysis of the most important literature on the housing problem throughout western Europe.

The report consists of three parts. The first part, under the caption of " factors which must be considered in the problem of cheap dwellings," begins with a compilation of facts pertaining to the results of private efforts in Germany, Belgium, France, and England, such as building societies, charitable funds, large employers' efforts to provide dwellings for their employees, the relation between the building societies and government savings banks, etc.

This is followed by a study of the problem of state intervention. To trace the development of the idea of intervention of public authority, whether central, provincial, or municipal—a very careful digest is given of the proceedings of the seven international congresses on housing held in Paris (1889), Antwerp (1894), Bordeaux (1895), Brussels (1897), Paris (1900), Düsseldorf (1902), and Liege (1905). The authors of the report endeavor to show the rapid growth of the idea of direct government intervention within the last decade, the first congress adopting resolutions against any intervention of the state or the local authorities which would compete with private enterprise or influence the level of rents, while at the congress of Liege a resolution was passed unanimously that public authorities should favor and encourage the building and purchase by the workingmen of healthful and cheap dwellings by means of tax exemptions and all proper measures calculated to develop loans on real estate. The concluding chapter of the first part contains a digest of legislation on housing conditions in Great Britain, Belgium, France, Italy, Germany, Austria, and Denmark. The text of the most important laws is given in the appendix.

The second part of the report (76 pages) is devoted to a discussion of housing conditions and the housing problem in Spain. The sources of information in regard to the housing conditions are, first, the investigation into the conditions of the working classes made by the Commission on Social Reforms in 1884; and second, several local investigations made by the Institute of Social Reforms on various occasions in 1904–1906. The data obtained by the first investigation are scarcely recent enough to be of any but historical interest.

The local housing investigations made by the institute within the recent years refer (1) to the mines of Vizcaya, (2) the tile makers in Madrid, (3) the mines of Villanueva.

The mines of Vizcaya are mostly located at some distance from the settlements, and the employers had found it necessary to construct frame barracks of a temporary nature for the accommodation of their employees. The accommodations provided by these structures were stated to be very unsatisfactory. The houses were rented to the foremen at the mines, who often use the authority obtained from this fact to their own advantage. While the barrack type of building has largely disappeared, being replaced by smaller buildings with separate apartments, the power of letting them is still left to the foremen of the mines. These conditions have frequently led to strikes of the miners.

The hygienic conditions are described as not what they ought to be. The dwellings usually consist of bedrooms, a kitchen, and a dining room, though the latter is often absent. Subletting is the rule. Everything is sacrificed to the chance of putting in extra bedsteads. Two workingmen usually sleep in each bed. The provisions for ventilation at night are very bad, the bedding very poor, and linen seldom clean, being changed but once a month. A place in a bed is rented at 7.50 or 10 pesetas ($1.45 or $1.93) per month, the higher priced bed being somewhat wider and better provided with bedding. On the other hand, much better conditions were found in the mines of Villanueva (Seville) during an investigation in 1904. In these mines the workingmen lived in hovels before the employers provided housing accommodations for them. The mining company built special suburbs on an elevated situation, with wide and clean streets, well-ventilated houses, with large doors and windows, and small yards. Drinking water is free, and is transported on horseback to the houses in small casks at the expense of the company. The houses built are of two types; the smaller of two rooms rent for 3 pesetas ($0.58) per month, the larger for 7.50 pesetas ($1.45) per month.

The housing conditions of the tile makers in Madrid were investigated by the institute in 1904. They were found to live in small hovels, more fit for animals than for human beings. These hovels were about 1½ meters (59 inches) long and wide, and 1.60 meters (63 inches) high, contained only one room, and had no ventilation except through the door.

These three isolated examples are not sufficient to draw any general conclusions as to the housing conditions of the working classes. In 1906 the third ("technical administrative") section of the Institute of Social Reforms undertook a general inquiry into the housing conditions, by means of correspondence; but while the answers cover a larger part of the Kingdom, the inquiry was not comprehensive enough to give more than a very general idea of the situation. According to statements of public officials, the housing conditions of workingmen were good in 56 localities out of 221 reporting, or 25.34 per cent; they were fair in 21 localities, or 9.5 per cent; bad in 41 localities, or 18.55 per cent; they needed improvement in 49 localities, or 22.17 per cent; in 12 localities, or 5.42 per cent, the employees mostly owned the dwellings they lived in; in 9, or 4.07 per cent, suburbs were especially constructed for workmen; in 3 localities, or 1.36 per cent, the employers provided their wage-earners with housing facilities free; societies for construction of dwellings and their sale to workingmen under favorable conditions existed in 13 localities, or 5.88 per cent; and in 10 localities, or 4.52 per cent, the local authorities were considering plans for construction of workingmen's houses to be conveyed to wage-workers on favorable conditions.

Many efforts have been made in Spain by the Government toward a more active participation of public authority in the improvement of housing conditions during the last 30 years, and these are reviewed in the report; among the results actually accomplished the most important was the enactment of a law in 1877 conferring tax exemption and other privileges upon the society La Constructora Benéfica, an organization for the construction of workingmen's dwellings, and the investigation of housing conditions by the commission of 1884.

The description of the private social efforts toward stimulating ownership of homes among the working classes claims a chapter in this part of the report. The results of these private efforts are very meager. The most important organizations in this class are La Constructora Benéfica, above mentioned, La Compañía Madrileña de Urbanización, and a few others, mostly operating in Madrid, but the scope of the activity of most of these is very limited. A few trade-union pension funds and mutual credit associations, such as Caja de Ahorros de los Empleados de Ferrocarriles and the Montepío General Obrero de España, are permitted to invest their funds in loans for the construction of dwellings by their members.

The third part of the report contains a detailed discussion of the principles upon which a law for improvements of housing conditions among working classes must be based in Spain; this part contains all the conclusions of the economic section of the institute, while the first two parts are simply a careful compilation of information available.

In the opinion of the section the housing problem in Spain may not be so acute as in some other European countries, mainly because of the milder climatic conditions; nevertheless it is growing in importance because of the same factors which have created the housing problem in other countries, namely, the development of industry and the growth of urban centers at the expense of the rural population. The private and social efforts toward improving the housing conditions of the working classes, few as they are, are evidence that such improvement is recognized by public opinion as a social need. Without discussing the problem of the intervention of the State from a theoretical point of view, the section points out that such intervention in some form is indicated by the study of the proceedings of the international housing congresses and foreign legislation, and is supported by a large variety of social, hygienic, and economic reasons.

While very little has as yet been accomplished in Spain in the line of state intervention, proposals for such intervention have been frequently made, and the Spanish law contains no principle which would interfere with such intervention. On the contrary, the accident-compensation act and similar legislation is quoted as constituting important precedents of the power of the State to intervene in the solution of important social problems. Such state intervention must not reduce itself to a mere grant of fiscal privileges or of financial subsidies. It must be well planned and of educational value, and must cooperate with existing private efforts. The principal objects of such intervention should be, first, to regulate social efforts, and, second, to stimulate, develop, and extend such social action. To reach these aims the State may promote the organization of societies in which should be represented various social elements; it also must provide the means to enable the societies to exercise this activity.

In the opinion of the section, a law for the improvement of housing conditions among wage-earners and small-salaried employees must be based upon the following principles: (1) The creation of an educational institution charged with the duty of stimulating the growth of cheap and hygienic dwellings and directing social efforts toward the same end, harmonizing these social efforts with those of the State. In this institution all social elements interested in the problem should be represented. (2) The determination of the ways and means by which the State can encourage private social efforts. (3) The intervention of the municipal authorities in the improvement of neighborhoods inhabited mainly by working people. (4) Determination of the guaranties which the builders of cheap dwellings must offer and the economic and hygienic conditions which these dwellings must satisfy. (5) The establishment of the legal regulations which would insure the proper working of the law by maintaining the ownership of the buildings and preventing the loss of such ownership by the family in case of death of the proprietor.

In elaboration of these general principles, the section recommends the establishment of local housing committees (*juntas*), following the Belgian example. The functions of these local committees are briefly stated as follows: General encouragement of building of workingmen's dwellings, by aiding the formation of private charitable or cooperative societies for that purpose and helping them in obtaining the necessary credit, by offering suggestions to the public authorities, and by other similar methods; general educational activity in this field by prize competitions; the study of housing conditions, etc.

According to the recommendations of the section, the establishment of such committees should rest with the Government. In order to represent all interested social elements, they should include representatives of the municipal government, of the property-owning classes, and of working classes. There should also be on these committees members of the medical and architectural professions, who possess the technical knowledge required. To be of any positive influence, the committees must be granted all rights of legal persons, such as to hold property and to receive donations and legacies and subsidies and appropriations from the State, the provinces, and the municipalities. It would be useless to establish these committees without providing them with the necessary funds for expenses; and the municipalities should provide them with a moderate appropriation to cover the necessary cost of administration, such as rent, office expenditures, and the remuneration of the secretary. The general administrative supervision of these committees should be lodged in the Institute of Social Reforms.

In addition to the establishment of these "juntas," the report recommends a more direct state intervention for the encouragement of the construction of cheap dwellings. Such intervention may avail itself of the following three methods: (1) Stimulation of building by tax exemptions, (2) promotion of private and social efforts by means of financial assistance, (3) encouragement of private capital.

Tax exemptions are freely used for similar purposes in the other European countries, and there are many precedents for their use in Spain. To be efficacious, such exemptions must be ample and generous. A total exemption from taxation for 20 years for buildings complying with the requirements of the law and exemption from the inheritance tax, when the house passes over to direct heirs and there is no other real estate in the legacy, are suggested.

In addition to such privilege as tax exemptions present the report considers direct financial subsidies especially necessary in Spain, either in definite amounts of money or in grants of land—since as compared with other countries, building societies are almost unknown in Spain, and their formation must be encouraged. Building societies should be subsidized in the following order of preference: (1) Cooperative societies consisting of wage-earners and salaried employees, (2) charitable societies, endowed with donations and legacies, and (3) other building societies which seek the benefits conferred by the law. There should be a legal limit to such subsidies in proportion to the original capital investments of the societies. Subsidies may also be granted to municipalities for the construction of cheap dwellings. The report follows the precedents established by the Belgian, French, and Italian laws, in recommending that savings banks be permitted to invest a certain part of their assets, under strict guarantees, in loans to societies for the construction of cheap dwellings or in the direct construction of such dwellings for sale or lease. Furthermore, an introduction of a method of combining insurance with the sale of cheap dwellings, following the Belgian example, is considered very desirable, in order to secure to the family the possession of the home in case of the death of the breadwinner, for the fear of such death with the consequent inability to meet the recurrent payments, often deters a workingman's family from purchasing a home.

The form of insurance recommended is called in the report "seguro mixto," and is practically an endowment insurance for the amount of the loan made in order to purchase the house. The endowment insurance matures at the same time as the loan. In case of death the loan is liquidated immediately by the value of the policy. The purchaser of the house pays insurance premiums on the policy instead of installments and interest on the loan. The section did not think itself justified, however, to urge the introduction of this measure, for the reason that the Instituto Nacional de Previsión (National Insurance Institute) recommended by the Institute of Social Reforms was not yet established, and there was no institution which could be charged with the administration of this new form of popular insurance.([a])

The question of the relation of the municipalities to the housing problem is next taken up. The municipalities are most closely concerned in this problem, and they can influence it in two ways—by control and inspection of workmen's dwellings, a municipal function delegated to it by the authority of the State, and by direct encouragement or intervention in the construction of cheap dwellings with a possibility of municipalization of such dwellings. After a brief review of foreign legislation pertaining to this problem, the section arrived at the following conclusions: There should be effective cooperation between the municipalities and the local housing committees to be established. The committees would be best qualified to control the proper inspection and enforcement of sanitary laws by systematic investigation of conditions; they would also formulate the plans for municipal activity. The necessary means for carrying out these plans might be obtained from state subsidies, from the sale of old materials, from special taxes, approved by the State, from the sale of municipal real estate, and from rentals of buildings owned by the municipalities.

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[a] Since the report was published the National Insurance Institute was established by the law of February 27, 1908, and subsequently this insurance scheme was included in the draft of the proposed housing law.

These are the main principles upon which a law for the encouragement of cheap dwellings should be based in the opinion of the first (economic) section of the Institute of Social Reforms; and these were all embodied in the draft of the law as approved by the institute as a whole.

The report closes with several appendixes containing the following documentary material: (1) Text of proposed Spanish laws for the encouragement of workingmen's dwellings introduced in the Chamber of Deputies in 1878, and in the Senate in 1906 (10 pages); (2) constitutions, by-laws, and regulations of the principal Spanish societies for the improvement of housing conditions (70 pages); (3) Spanish translations of the most important European laws for the improvement of housing conditions (56 pages), and (4) a comprehensive bibliography (34 pages).

DECISIONS OF COURTS AFFECTING LABOR.

[Except in cases of special interest, the decisions here presented are restricted to those rendered by the Federal courts and the higher courts of the States and Territories. Only material portions of such decisions are reproduced, introductory and explanatory matter being given in the words of the editor. Decisions under statute law are indexed under the proper headings in the cumulative index, page 195.]

DECISIONS UNDER STATUTE LAW.

BOYCOTT—INJUNCTION—CONTEMPT—EVIDENCE—*The Buck Stove and Range Company v. The American Federation of Labor, Supreme Court of the District of Columbia, 36 Washington Law Reporter, page 822.*—The corporation named had secured an injunction against the officers and members of the American Federation of Labor to prohibit the publication of the corporation as "unfair" or otherwise boycotting or interfering with its business. (See 35 Washington Law Reporter, p. 797; Bulletin No. 74, p. 246.) The case eame before the court at this time on a rule against certain defendants to show cause why they should not be punished for contempt as having violated the injunctive order. These defendants were Samuel Gompers, president, and Frank Morrison, secretary, of the American Federation of Labor, and John Mitchell, a vice-president and member of the executive council of the Federation, and up to April, 1908, president of the United Mine Workers of America. These defendants were found guilty of contempt as charged and were sentenced accordingly.

The opinion of the court was delivered by Judge Wright, who reviewed at length the conditions antecedent to the injunction, the announced attitude of the defendants toward it during and after the hearing on the subject, and their subsequent actions. Documents and quotations from published articles as well as parts of the evidence are reproduced, showing quite fully the condition of the case from its beginning until the time of the trial. Judge Wright spoke in part as follows:

Plaintiff was a member of an association of stove manufacturers, called The Stove Founders' National Defense Association. There existed an agreement of long standing between the Stove Founders' National Defense Association and the Metal Polishers, Buffers, Platers, Brass Molders, and Brass and Silver Workers' International Union of North America providing for the settlement of all disputes between a member of the Stove Founders' National Defense Association and a member of the union by a conference committee, and that the decision should be binding upon each party for a term of twelve months, and providing further "that pending the adjudication by the presidents and conference committee, neither party to the dispute shall discontinue operations, but shall proceed with business in the ordinary manner." Many grievances have been adjusted under this agreement, its provisions having been faithfully observed and kept by the Stove Founders' National Defense Association, and by the plaintiff as a member.

The thirty-six metal polishers in the employ of the plaintiff were "pieceworkers;" that is, they were paid by the piece, and earned from $4.00 to $5.25 per day, according to their individual skill and the number of hours worked.

In November, 1905, it first came to the attention of J. W. Van Cleave, president of the plaintiff, that metal polishers were leaving their work before quitting time, some of them as early as an hour and a half before, at whatever time they happened to finish a job. Shortly afterward the works were closed down for annual repairs and inventory, and upon the day of closing the president, Van Cleave, called together all polishers in the polishing department and addressed them thus: "I called their attention to what had come to my notice, and told them that we would not permit that; that our shop was then and always had been running ten hours; that all of our machinery ran ten hours; and that I called them there for the purpose of informing them that when we started up in the beginning of 1906, that every department would have to work, and every man in every department would have to work ten hours.

"I also called their attention to the fact that it had been reported to me that the Polishers' Union had put on a wage limit; that is to say, the amount per day that each man should earn and then quit work. I told them that if that was true, and that the men were submitting to that, that that was robbing their own wives and children, and that we would not submit to it; that God had never made any two men with the same ability, and, therefore, each man must earn all he could in the shop, doing all the work he could, and, it being piecework, he would thereby earn more or less, according to his ability.

"I told these men also, that if they were not satisfied with our rules and our shop conditions, that I would give them six days' notice three weeks before we opened shop in 1906, in order that they might get other places if they wanted to; but, if they returned to work they would have to return under the rules of our shop, and not under any rules that they might make."

Upon the reopening of the works in January, 1906, notices were posted in its polishing department by the plaintiff that all its employees were required to work ten hours a day during the year 1906. All of these men returned to work, accepted their old places and worked continuously ten hours a day until August 27th, earning large wages.

On this date the men struck, picketing being subsequently provided for, until at length a conference between the president of the company and committee from the unions was arranged for.

A stenographic report of this conference, spreading over nine typewritten pages, is appended to this opinion; its significance is to show that before these three labor unions endorsed the boycott that they knew that the metal polishers had never secured the nine-hour day, and were informed of the falsity of its position; that they understood that the thirty-six metal polishers had violated the shop rules and broken the agreement with the Defense Association; and its further significance is to tie the International Iron Molders' Union of North America to the distortion appearing in its statement of grievances laid before the executive council of the American Federation of Labor as a basis for its endorsement of the boycott, and signed by this same Bechtold himself as its secretary and treasurer, as follows:

"About August 1st, 1906, the Buck's Stove and Range Company attempted to force the metal polishers to resume the ten-hour workday, after enjoying the nine-hour workday for a period of eighteen months, and are still making every effort within their power to adjust their grievance. Mr. J. W. Van Cleave, president of the Citizens' Industrial Alliance, also president of the Manufacturers' Association, enjoys a reputation equal to that of Parry and Post. He is president of the Buck's Stove and Range Company, and absolutely refused to deal with a committee composed of David Kreyling, business agent of the Central Trades and Labor Union of St. Louis, Edward Lucas, a member of the Metal Polishers', and myself, stating that he was a member of the Founders' National Defense Association, and that his association acted for him in such matters."

The boycott was endorsed by each of these three unions shortly after this conference.

No question is made about the truth of any of the foregoing. No evidence was offered by the defendants in gainsay or in contradiction. Manifestly, no boycott based on such a foundation could ever hope for even the toleration, much less the support, of the friends of organized labor or even the mass of labor men themselves, as seems to have been foreseen by the promoters of this particular enterprise; for the thousands of circulars distributed amongst the public and the customers of the plaintiff generally, stated a case of deceit and falsity, a case that had no existence and never had had.

Then follows an account of the publication of various circulars and notices and of the cooperation of various affiliated organizations, including that of the American Federation by its committees and officers and through the columns of the organ of the Federation, the American Federationist. The methods and effectiveness of the boycott were fully shown, and the court, continuing, said:

Such is a meager portrayal of the status at the time of the preliminary injunction; such the procession of evils which it sought to reach and to arrest awhile, until the merits of the controversy could be judicially ascertained, according to due process of the law of the land; its sketching though tedious and laborious has seemed essential here, in order to an understanding of the relationship which the doings and contrivances of the respondents subsequent to the injunction, bear to the execution of the preestablished interdiction and the uninterrupted consummation of its ends.

Prior to the enactment of the "Sherman Act," by the Congress of the United States, it was at common law a crime for two or more persons to combine for the purpose of consummating an unlawful act, whether that unlawful act was the ultimate object of the combination or whether the unlawful act was but a step to the achievement of an ultimate lawful design; were an unlawful act anywhere projected in the agreement the crime was complete in the mere agreement itself, although no steps were ever taken toward its execution and although its ultimate purpose was good. That an individual should pay his debts was commendable; but an agreement to attain that desirable end through the method of beating him over the head, was a crime; and yet "unlawful acts," are not only those which are so grievously unlawful as to be public crimes; a violation of any civil right of another is none the less "unlawful" because it happens to be less than a crime.

When persons enter into a "contract" their status with respect to each other and the balance of mankind is straightway altered; each is vested with rights which he did not have before, in that each is entitled from the other to the performance of the obligations of that contract; the right to the performance of these obligations the balance of mankind are required to respect; not even the lawmaking power of all the States of the Union severally assembled is potent to deprive either by even a jot or tittle and with these obligations can not interfere; for in the Constitution is it written, "No State shall * * * pass any law impairing the obligation of contracts." When came labor unions to be of greater power and majesty than these? The breach of a contract by a party to it being "unlawful" (not unlawful in the sense of criminality, but unlawful in the sense of a violation of the "civil" right to its performance), the act of a third person in persuading him into the breach is equally "unlawful;" and if a combination of two or more persons contemplates the breach of a contract through even the persuasion of a party to the contract, the combination comprises an "unlawful act" and the combination alone and in itself is a common law crime.

Second. A business, be it mercantile, manufacturing or other, which has for a long time been successfully operated and developed possesses a greater value than a like business newly launched, although the latter be exactly equivalent in respect of stock, equipment, moneys and all other physical possessions; the basis of the excess in value of the one over the other is termed the "good will;" it is the advantage which exists in established trade relations with not only habitual customers but with the trading public generally; the advantages of an established public repute for punctuality in dealing, or superior excellence of goods or product; finally, in last analysis, a "good will," when it exists is one return for the expenditure of time, money, energy, and effort, in development; it is a thing of value in the sense that it is a subject of bargain and sale; ofttimes of a value which exceeds that of all physical assets taken together; in that it may possess exchange value, it may be "property;" when it does possess "exchange value," property it is; and a combination for the purpose of destroying it is for an "unlawful act," whether you call the combination a "labor union" or a "trust." There is no room here for confusion with cases of business competition between individuals, or individual firms; competition gives to the public the advantage of choice, and thereby conduces to the public advantage by stimulating a betterment of product; elimination either promotes monopoly or drives utterly from the markets and from the reach of the public a product which perchance may be generally necessary or universally desired; these ends an individual single handed is impotent to achieve, but a combination if sufficiently far-reaching may bring them readily to pass; therein is the combination unlawful, while the single-handed project of an individual is not.

Third. Congress has seen fit to enact (1 Sup., 762):

"An act to protect trade and commerce against unlawful restraints and monopolies.

" SEC. 1. Every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal.

" Every person who shall make any such contract or engage in any such combination or conspiracy shall be deemed guilty of a misdemeanor, and, on conviction thereof shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments in the discretion of the court."

The plaintiff's trade was " among the several States; " its product an article of " commerce " among them; the confederation of the various defendants was a " conspiracy " in restraint of both (Loewe *v.* Lawlor, 205 U. S. 274), although if fault with that word is found, it may be laid aside and " combination " substituted; for respecting the case here it is all one.

From the foregoing it ought to seem apparent to thoughtful men that the defendants to the bill, each and all of them, have combined together for the purposes of—

1. Bringing about the breach of plaintiff's existing contracts with others;
2. Depriving plaintiff of property (the value of the good will of its business) without due process of law;
3. Restraining trade among the several States;
4. Restraining commerce among the several States.

And if either conclusion 1 or 2 is accurate, are guilty of the common law crime, " conspiracy; " if either conclusion 3 or 4 is accurate, guilty of the crime defined by the statute; there is, in my judgment, no escape from either conclusion of the four; under either aspect of the matter their ultimate purpose is unlawful, their concerted project an offense against the law, and they are guilty of crime.

It was to stay the unlawful impairment of the plantiff's contracts; stay the destruction of the value of its business " good will; " stay the restraint of trade among the several States; stay the restraint of commerce among them and preserve an existing status until the case could finally be heard, that the injunction was designed; in so far as the devices and instrumentalities employed by the plot were numerous and elaborate, the plot itself was responsible for the extent to which the injunction must proceed to those details if it would reach plot and plotters.

Then follows the injunction order, a part of which is reproduced in Bulletin No. 74, p. 254.

That Gompers and others had in advance of the injunction determined to violate it if issued, and had in advance of the injunction counseled all members of labor unions and of the American Federation of Labor and the public generally to violate it in case it should be issued, appears from the following, which references point out also the general plan and mutual understanding of the organizations and their various members:

Extract from Report of the Proceedings of the Convention of the American Federation of Labor, 1906, page 14:
"Report of Samuel Gompers, president.

"CITY CENTRAL BODIES—THEIR IMPORTANCE AND DUTY.

"* * * Our international trade unions and the American Federation of Labor are dependent upon local central bodies to carry out the program or policy decreed by the general labor movement. * * * but the practical assistance they can and do render the labor movement in executing the plans devised for the protection and promotion of the interests and rights of the toiling masses is incalculable. They are not only the local municipal council of industry dealing with sociological problems, but they are also the concrete power to enforce and execute within the jurisdiction of their existence the judgment of the highest court in the realms of labor of America, the American Federation of Labor. * * *

"When, however, the final word has been spoken by the court of last resort of labor, composed of the representatives of the intelligent organized wage-earners of America, to these at least conformity by our central bodies is essential to the safety and the well-being of the labor movement. * * *."

In his report as president, to the 1907 convention of the American Federation of Labor, he stated:

"In the meantime we should proceed as we have of old, and wherever a court shall issue an injunction restraining any of our fellow-workers from placing a concern hostile to labor's interest on our unfair list; enjoining the workers from issuing notices of this character, the further suggestion is made that upon any letter or circular issued upon a matter of this character, after stating the name of the unfair firm and the grievance complained of, the words 'We have been enjoined by the courts from boycotting this concern' could be added with advantage."

And when on the stand as a witness in this cause, on January 30, 1908, his attention was called to that portion of his report, he replied in respect to it:

"Q. Have you ever recalled that suggestion?

"A. No, sir; I would rather reaffirm it."

In the November, 1902, number of the Federationist, in its editorial columns, he printed and published:

"We beg to say plainly and distinctly to Mr. Merritt and fellow-sympathizers that the American Federation of Labor will never abandon the boycott, and that the threats against the Federation are idle, impotent and impudent."

A day or two after the filing of the bill herein he publicly stated in an interview with three representatives of prominent newspapers:

"When it comes to a choice between surrendering my rights as a free American citizen or violating the injunction of the courts, I do not hesitate to say that I shall exercise my rights as between the two."

On September 5, 1907, at the Jamestown Exposition, in the course of a Labor Day speech, delivered as a public address, he said:

"An injunction is now being sought from the supreme court of the District of Columbia against myself and my colleagues of the executive council of the American Federation of Labor. It seeks to enjoin us from doing perfectly lawful acts; to deprive us of our lawful and constitutional rights. So far as I am concerned, let me say that never have I, nor ever will I, violate a law. I desire it to be clearly understood that when any court undertakes without warrant of law by the injunction process to deprive me of my personal rights and my personal liberty guaranteed by the Constitution, I shall have no hesitancy in asserting and exercising those rights."

In the October, 1907, issue of the Federationist he published the same at length in the editorial columns, and in the same columns of the same number stated:

"So long as the right of free speech and free press obtains, we shall publish the truth in regard to all matters. If any person or association challenges the accuracy of any of our statements, we are willing to meet him or them in the courts and defend ourselves. So long as we do not print anything which is libelous and seditious, we propose to maintain our rights and exercise liberty of speech and liberty of the press. If for any reason, at any time, the name of the Buck's Stove and Range Company does not appear upon the 'We Don't Patronize' list of the American Federationist (unless that company becomes fair in its dealings toward labor), all will understand that the right of free speech and free press are denied us; but even then this will not deprive us, or our fellow-workmen and those who sympathize with our cause, from exercising their lawful right and privilege of withholding their patronage from the Van Cleave Company—The Buck's Stove and Range Company of St. Louis.

"So far as we are personally and officially concerned, we have fully stated our position in the American Federationist and elsewhere.

"Do not fail to keep the Buck's Stove and Range Company of St. Louis in mind and remember that it is on the unfair list of organized labor of America."

In a column in the same issue headed "Editorial Notes," he used the following language:

"So labor must not use its patronage as it will—that is, if Van Cleave of Buck's Stove and Range Company fame has his way. But what vested right has that company in the patronage of labor or of labor's friends? It is their own to withhold or bestow as their interest or fancy may direct.

"They have a lawful right to do as they wish, all the Van Cleaves, all the injunctions, all the fool or vicious opponents to the contrary notwithstanding.

"Wonder whether Van Cleave will try for an injunction compelling union men and their friends to buy the Buck's Stove and Range Company's unfair product?

"Until a law is passed making it compulsory upon labor men to buy Van Cleave's stoves we need not buy them, we won't buy them and we will persuade other fair-minded, sympathetic friends to cooperate with us and leave the blamed things alone.

"Go to ——— with your injunctions."

(He has taken an oath in this case here, that he did not mean "Go to hell with your injunctions.")

"The Buck's Stove and Range Company of St. Louis (of which Mr. Van Cleave is president) will continue to be regarded and treated as unfair until it comes to an honorable agreement with organized labor. And this, too, whether or not it appears on the 'We Don't Patronize' list."

After the motion for the injunction had been heard and submitted to the court, and pending its decision there were prepared, published and despatched to each secretary of the 25,000 or 30,000 unions an "Urgent Appeal" for funds, accompanied by a circular letter signed by Gompers and Morrison as "president" and "secretary" respectively, which contained:

"The court will soon give a decision on the legal issue which has been raised. We shall continue to maintain that we have the right to publish the name of the Buck's Stove & Range Company upon the 'We Don't Patronize' list. Should we be enjoined by the court from doing so, the merits of the case will not be altered nor can any court decision take from any man the right to bestow his patronage where he pleases.

"Bear in mind that you have a right to decide how your money shall be expended.

"You may or may not buy the products of The Buck's Stove & Range Company.

"There is no law or edict of court that can compel you to buy a Buck's stove or range.

"You can not be prohibited from informing your friends and sympathizers of the reason why you exercise this right. You have also the right to inform business men handling the Buck's Stove & Range Company's products of its unfair attitude toward its employees and ask them to give their sympathy and aid in influencing the Buck's Stove & Range Company to deal fairly with its employees and come to an honorable agreement with the union primarily at interest.

"It would be well for you as central bodies, local unions and individual members of organized labor and sympathizers to call on business men in your respective localities, urge their sympathetic cooperation and ask them to write to the The Buck's Stove & Range Company of St. Louis, urging it to make an honorable adjustment of its relations with organized labor. Act energetically and act at once. Report the result of your effort to the undersigned."

SINCE THE INJUNCTION.

Having in mind what may be in the foregoing delineation which indicates that either of the three respondents did before the issuance of the injunction deliberately determine to willfully violate it and did counsel others to do the same, let me now turn to their sayings and doings since the decision of Mr. Justice Gould was formally announced, and the order of injunction itself put into technical operation by the giving of the injunction bond. On December 17, 1907, the opinion of the court was filed in the case; the order of injunction was entered on December 18th; the giving of the undertaking required by it was consummated on December 23rd, and I am disposed now to look at the separate conduct of each respondent with a view of recording his individual responsibility in sufficient detail.

GOMPERS.

He testified that the January number of the American Federationist, edited by him as president of the American Federation of Labor, still contained the name of the plaintiff upon its " Unfair List," and contained also the following:

"A limited number of the American Federationist for 1907, bound in two volumes, may be had on application to this office. The 1907 volumes are bound in the same style as the preceding years.

" The official printed proceedings of the Norfolk convention of the A. F. of L. are now ready and can be had upon application by mail, 25 cents per single copy, $20 per hundred. Postage prepaid by the A. F. of L."

" The said proceedings of the Norfolk convention contain, at page 91, the name of petitioner as being on the 'Unfair' list of the American Federation of Labor."

He testifies that more than 10,000 copies were hurriedly printed in Washington:

" Q. When were they received?

"A. About December 20th or 21st.

" Q. That is, they were received from the printer about December 20th or 21st?

"A. About that; I am not sure as to the date, but I made it a special purpose to get it out a day or two earlier, and if that is the purpose of your question, I will tell you.

" Q. What is it?

" A. It was to issue the American Federationist before the undertaking had been made, so as to make the injunction of Justice Gould effective.

" Q. You knew at the time the order had been made?

" A. Yes, sir. . . .

" Q. Were these 10,000 copies distributed?

" A. Yes, sir.

" Q. From the office?

" A. Yes, sir.

" Q. In what way?

"A. Through the mails, through carriers, through direct purchases. . . .

" Q. Have you unions in California?

" A. Affiliated?

" Q. Yes.

" A. We have local unions affiliated to international unions.

" Q. Yes; and to whom these were sent?

" A. Yes, sir; but I suppose they were in transit.

" Q. That they would be in transit on the 23d?

" A. More than likely, sir. I did not give it a thought, but I suppose so now you ask me the question. I never gave it a thought. . . .

"Q. At the time you sent these out through the mails you supposed they would be in transit?

"A. I did not suppose anything of the kind. I did not give the matter a thought as to whether it was California, or Kalamazoo, or the District of Columbia."

In this he overreached himself; for the mails were his agents, chosen by him as the medium for delivery to distant points; and if, after the injunction became operative he violated it through the instrumentality of his own hands or through the instrumentality of another medium of his own preference, is all one. Had he carried the copies to California himself, what difference from sending another with his errand?

In the February number of the 1908 American Federationist he published over his own name a lengthy editorial concerning the order, which amongst other things stated:

"With all due respect to the court, it is impossible for us to see how we can comply with all the terms of this injunction," and further stated there:

"This injunction cannot compel union men or their friends to buy the Buck's stoves and ranges. For this reason, the injunction will fail to bolster up the business of this firm, which it claims is so swiftly declining.

"Individuals, as members of organized labor, will still exercise the right to buy or not to buy the Buck's stoves and ranges. It is an exemplification of the saying that 'You can lead a horse to water, but you can't make him drink,' and more than likely these men of organized labor and their friends will continue to exercise their right to purchase or not purchase the Buck's stoves and ranges."

On other pages of the same issue of the American Federationist he published the order itself at length prefacing it by a heading printed in larger type of which the following is a facsimile, as far as the quotation goes:

"ORDER GRANTING INJUNCTION.

"In the official organ of the National Association of Manufacturers, one of the counsel for the Buck's Stove and Range Company declares that punishment for violation of the injunction issued by Justice Gould, against the American Federation of Labor, applies particularly to those within the territorial limits of the District of Columbia who violate the terms of the injunction. That those who violate the terms of the injunction in any other part of the country outside of the District of Columbia can be punished only when they thereafter come within the territorial limits of the District of Columbia. Counsel for the American Federation of Labor assure us that this construction of the court's order is accurate."

THE INJUNCTION—BUCK'S STOVE AND RANGE CO. VS. AMERICAN FEDERATION OF LABOR.

"This cause coming on to be heard upon the petition of the complainant for an injunction pendente lite as prayed in the bill, and the defendant's return to the rule to show cause issued upon the said petition, having been argued by the solicitors for the respective parties, and duly considered, it is, thereupon by the court, this 18th day of

December, A. D. 1907, ordered of the defendant or any of them, their agents, servants, attorneys, confederates, or other person or persons acting in aid of or in conjunction with them or which contains any reference to the complainant, its business or product in connection with the term 'Unfair' or with the 'We Don't Patronize' list, or with any other phrase, word or words of similar import, and from publishing or * * *."

The evidence is so suggestful of a finding by the court that this was for the purpose of inducing persons beyond the District of Columbia to violate the injunction and for the purpose of defeating it, that that finding is now made.

In the March, 1908, number of the American Federationist he published in the editorial columns this:

"It should be borne in mind that there is no law, aye, not even a court decision, compelling union men or their friends of labor to buy a Buck's stove or range. No, not even to buy a Loewe hat."

In the April, 1908, number this:

"The temporary injunction issued by Justice Gould, of the court of equity, of the District of Columbia, in the (Van Cleave) Buck's Stove and Range Company of St. Louis against the American Federation of Labor, its officers and all others, has been made permanent. The case will now be carried to the court of appeals of the District of Columbia.

"It should be borne in mind that there is no law, aye, not even a court decision, compelling union men or their friends of labor to buy a Buck's stove or range. No, not even to buy a Loewe hat."

And in another column of that issue, this:

"Bear in mind that an injunction issued by a court in no way compels labor or labor's friends to buy the product of the Van Cleave Buck's Stove and Range Company of St. Louis.

"Fellow workers, be true and helpful to yourselves and to each other. Remember that united effort in cause of right and just must triumph."

Other quotations from addresses and published matter are reproduced, and Judge Wright said:

The court finds from the evidence that all of which was said, all of which was done, all of which was published, all of which was circulated in willful disobedience and deliberate violation of the injunction, and for the purpose of inciting and accomplishing the violation generally, and in pursuance of the original common design of himself and confederates, to

1. Bring about the breach of plaintiff's existing contracts with others;
2. Deprive plaintiff of property (the good will of its business) without due process of law;
3. Restrain trade among the several States;
4. Restrain commerce among the several States.

Since the filing of these very charges in contempt against him, in the September, 1908, Federationist, Gompers published:

"* * * Money makes the mare go, and Mr. Van Cleave's money is making this contempt case go. * * * But labor will rise in its might and crush Mr. Van Cleave and all his money that may work now or in the future for restricting labor in its fundamental rights of free speech and free press."

In that same number was the following in editorial:

"We have also witnessed in the past year most serious judicial invasion and usurpation of individual liberty and human freedom by the abuse of the writ of injunction.

"* * * An attempt has been made by the abuse of the writ of injunction to deny and prohibit the freedom of speech and the freedom of the press; and men have been cited to show cause why they should not be punished purely for the right of free press and free speech—rights not only natural and inherent in themselves, but guaranteed by the Constitution of our country, and which our forefathers fought to save, and which a free people never dreamed would ever be placed in jeopardy."

And in a public address in Indianapolis on September 29, 1908, said:

"* * * I want to say this to you and to all that it may concern, that so long as I retain my health and my sanity I am going to speak upon any subject on God's green earth, and as a citizen of this country and as editor of the American Federationist, the official monthly magazine of the American Federation of Labor, so long as I am endorsed by the labor of the United States with the performance of duties of that office, I will discuss every subject which forms itself to my judgment as being just and right. * * * The injunction which Judge Taft issued while upon the bench is now the basis for the injunction against the American Federation of Labor and its officers and the great rank and file of the labor organizations of the country, just as in issuing the injunction of the Buck Stove & Range Co. quoted Judge Taft injunction in support of his, Judge Gould's position. Do you know that about two weeks ago John Mitchell, Frank Morrison, and I were three of us haled to court to show cause why we should not be punished, why we should not be sent to jail for contempt of court. * * * I want to say to you that if the injunction is strictly construed and enforced, I am in contempt of court again for telling you that, but I propose to discuss this thing, and I do not want to be in contempt of court, but I propose to discuss it. The injunction prohibits me from mentioning the above stove and range company in this case to anybody, either by word of mouth or by letter, or either in letter or circular or any way, but I can't help that. I must discuss it."

MORRISON.

Frank Morrison is, and has been, secretary of the American Federation of Labor, stationed at its headquarters in Washington, and as such appeared and took part in the proceedings of the annual conventions of the American Federation of Labor.

With knowledge of its contents he aided in the preparation, circulation and distribution, prior to December 23, 1907, of the same copies of the January, 1908, number of the American Federationist that are hereinbefore specified against Gompers and with the same purpose and intent.

He signed and took part in the preparation of and dispatched to each secretary of the 25,000 to 30,000 unions, along with the "urgent appeal," the circular letter hereinbefore specified against Gompers, with full knowledge of its contents and with the same purpose and intent.

He took part in the preparation, publication, circulation and distribution of the April, 1908, number of the American Federationist, with full knowledge of its contents as hereinbefore specified against Gompers and with the same purpose and intent.

With knowledge and approval of the other writings and speakings hereinbefore specified against Gompers he took part in the circulation and distribution in large numbers of each and every issue of the Federationist containing them, as hereinbefore specified against Gompers and with the same purpose and intent.

JOHN MITCHELL.

John Mitchell is and was one of the vice-presidents of the American Federation of Labor, one of the members of its executive council and until April, 1908, was president of the United Mine Workers of North America.

He signed with full knowledge of its contents the "urgent appeal," which accompanied the twenty-seven odd thousand circular letters to the various secretaries as hereinbefore specified against Gompers and Morrison; and with full knowledge of their contents, counseling their distribution; and with the same purpose and intent.

On the 25th of January, 1908, at the annual convention of the United Mine Workers of America, Mitchell, its president, being in the chair, the following resolution was passed:

"RESOLUTION NO. 73.

"Whereas, the Buck's Stove and Range Company, of St. Louis, Mo., have taken legal steps to prevent organized labor in general, and the officers and executive committee of the A. F. of L., in particular, from advertising the above-named firm as being on the 'Unfair' or 'We Don't Patronize List' and

"Whereas, by the issue of such an injunction or restraining order as prayed for by the above-named firm, organized labor will be deprived of one of its most effective weapons, and

"Whereas, J. W. Van Cleave, the president of above-named firm, also president of the National Manufacturers' Association, stated that in a few years' time he would disrupt organized labor; therefore, be it

"Resolved, That the U. M. W. of A., in nineteenth annual convention assembled, place the Buck's stoves and ranges on the unfair list, and any member of the U. M. W. of A. purchasing a stove of above make be fined $5.00, and failing to pay the same be expelled from the organization."

Mitchell testifies:

"I cannot recall anything of the introduction of or passing of the resolution. By referring to the transcript of the record I see I was in the chair when the resolution was adopted.

"Q. But you have no independent recollection in regard to it?

"A. I have not."

We accept his statement that he has forgotten; but what of that? The fact that he undertook and discharged the duties of a presiding officer alone raises a presumption that he attended to the affairs of the assembly over which he was presiding; a presumption which no mere "non me recordo" is sufficiently weighty to overcome; moreover, the testimony of the others, the nature of the subject, the identity of the plaintiff and the then position of organized labor respecting it, and the publicity then given to the situation render it indubitable that Mitchell was fully conscious of the details of the resolution and willfully took part in its passage at the time.

On the 9th day of January, 1908, the resolution was printed in the United Mine Workers Journal, as Mitchell knew it would be, and by that organ alone disseminated amongst the 300,000 members of the association whose chief officer and head he was.

In defense of the charges now at bar, neither apology nor extenuation is deemed fit to be embraced; no claim of unmeant contumacy is heard; persisting in contemptuous violation of the order, no defense is offered save these.

That the injunction:

"1. Infringed the constitutional guaranty of freedom of the press.

"2. Infringed the constitutional guaranty of freedom of speech."

These defenses do not fill the measure of the case; the injunction was designed to stay the general conspiracy of which the publication of the "Unfair" and "We Don't Patronize" lists were but incidents; the injunction interferes with no legitimate right of criticism or comment that law has ever sanctioned and the respondents' intimation that it does so is a mockery and a pretense.

It is no more suspected by the observant that courts of equity enjoin the commission of mere threatened crimes, than they are suspected to hesitate in enjoining certain infractions of property rights although happening to be conceived or involved in crime; these infractions are limited to infractions of such a particular nature as that after their perpetration the law has no remedy adequate against their results.

Finding in the common law that not all writings, not all speakings are lawful, that some are unlawful, and looking about for the particular rule which is competent to distinguish the lawful from the unlawful I deduce it from all considerations to be this: Whatever in writing, print or speech violates a legal right of another, is unlawful; whether in itself alone it accommodates that result, or whether it be but one instrument in a concert tuned to that end. If such a writing, printing or speaking is unlawful, the rest is clear; it ought to be enjoined in advance, if either it alone, or the concert, so invades rights of property as that the law affords no remedy adequate to compensate for the results; nor would I yet be thought to consider that the process of injunction of right should go no further; that the inestimable advantage of a good name may not thus be rescued from preconceived despoilment; but of such questions when they come.

Counsel are heard claiming that no one needed to obey the order, although no reason is brought save those already looked at; no discussion of the technical distinction between "void" and "erroneous" orders was undertaken although invited, wherefore my conceptions of this particular are destitute of the advantage to be had by considering the views of my brethren of the bar.

That the order was "void," according to the technical criteria by which the law determines "voidness" no one has shown me a pretense; yet under technical "voidness" alone, can parties escape the duty and the necessity of obedience; were it concededly "erroneous," in the sense that the tribunal had fallen into an error in the determination of a cause which it was invested with jurisdiction to "hear and determine," the duty and necessity of obedience remains nevertheless the same. And I place the decision of the matter at bar distinctly on the proposition, that were the order confessedly erroneous, yet it must have been obeyed. (Worden *v.* Searls, 121 U. S. 14.)

It is between the supremacy of law over the rabble or its prostration under the feet of the disordered throng.

The interpretation of the law of a matter by an appropriate judicial tribunal settles that matter between the parties; else there is not anywhere to be had a settlement which takes impartial account of both sides; even if it be said that tribunals now and then fall into error in particular matters, yet this error lies in the incomplete and finite nature of worldly things and should not overturn the rule; for the rule being the best attainable by finite man, holds better results for the social fabric, more promotes the general welfare than would any other rule; for any other rule would be not the best rule, but somewhat worse. It is to the end that errors so falling may be minimized by possible correction, that tribunals for review are established for the advantage of a party who has such claim to make; but meanwhile the decree fixes the law's seal upon the matter, there to remain until removed, if at all, in the manner of order; not by riotous hands.

It would seem not inappropriate for such a penalty as will serve to deter others from following after such outlawed examples; will serve physically to impose obedience even though late; will serve to vindicate the orderly power of judicial tribunals, and to establish over this litigation the supremacy of law.

COMBINATIONS TO FIX PRICES—RESTRAINT OF TRADE—POOLS AND TRUSTS—CONSTRUCTION AND APPLICATION OF STATUTE—*Rohlf v. Kasemeier et al., Supreme Court of Iowa, 118 Northwestern Reporter, page 276.*—Dr. W. A. Rohlf, a practicing physician, was, with thirteen others of like profession, indicted for fixing fees and charges for medical and surgical services, in alleged violation of section 5060 of the Code of Iowa, which reads as follows:

> Any corporation organized under the laws of this or any other State or country for transacting or conducting any kind of business in this State, or any partnership, association or individual, creating, entering into or becoming a member of, or party to any pool, trust, agreement, contract, combination, confederation or understanding with any other corporation, partnership, association, or individual, to regulate or fix the price of any article of merchandise or commodity, or to fix or limit the amount or quantity of any article, commodity, or merchandise to be manufactured, mined, produced, or sold in this State, shall be guilty of conspiracy.

Habeas corpus proceedings were instituted in the district court of Bremer County to secure the release of Rohlf from custody of the sheriff by whom he had been arrested and held, and his discharge was ordered. An appeal was taken to the supreme court, where the judgment of the court below was affirmed.

The case is of interest as discussing the principles governing combinations generally, including labor combinations, and their status where such laws as the above exist. The opinion of the court, which was delivered by Judge Deemer, is, excepting the preliminary statements, reproduced herewith:

The first point to be decided is: Do the acts charged constitute a crime under this section of the code? It will be noticed that it forbids a combination, agreement, or understanding to regulate or fix the price of any article of merchandise, or commodity, or of merchandise to be manufactured, mined, produced, or sold in this State. The primary inquiry is: Are the charges of a physician or surgeon for his medical skill or ability an article of merchandise or commodity to be produced or sold in this State. For appellant it is contended that the word "commodity" is broad enough to cover the charge made for professional services or skill, and that the trial court was in error in holding to the contrary. It must be remembered that the word is found in a criminal statute, and that in the interpretation of such statutes different rules apply from those which obtain in civil matters, or where contracts are involved. Nothing is to be added to such statutes by intendment, and, as a rule, they are to have a strict construction. Moreover, it is well settled that, in construing any statute, all the language shall be considered, and such interpretation placed upon any word appearing therein as was within the manifest intent of the body which enacted the law. Much of necessity depends upon the context and upon the usual and ordinary significance of the language used. Now, the word "commodity" is derived from the Latin "commodetas," and means primarily a convenience, profit, benefit, or advantage; but in referring to commerce it comprehends everything movable—that is, bought or sold—except animals. (See Webster's International Dictionary; Best *v.* Bauder, 29 How. Prac. (N. Y.) 489; Barnett *v.* Powell, 16 Ky. 409; Queen Ins. Co. *v.* State, 86 Tex. 250, 24 S. W. 397, 22 L. R. A. 483.) This word appearing in another statute (McClain's Code, ¶ 5454) was held to cover insurance, and it was decided that a combination to fix insurance rates was illegal. (See Beechley *v.* Mulville, 102 Iowa, 602, 70 N. W. 107, 71 N. W. 428, 63 Am. St. Rep. 479.) But in that case the parties were not selling their own services. They were, as the opinion says, selling insurance, which was regarded as a commodity as used in the statute then under consideration. Here the indicted defendants were for a price giving their own services, or perhaps selling them, and the question is: Were these personal services a commodity?

As already indicated, the word must be taken in connection with the others used in the statute, and it is manifest that the commodity referred to must have been such as could be manufactured, mined, produced, or sold in the state, and the price was to be of an article or merchandise or commodity. If the contention of appellant be correct, the statute covers all kinds of personal labor, both skilled and unskilled, under the term "commodity." Indeed, this is the broad claim made by counsel. Now, whilst there is a class of political economists who treat labor as so much merchandise, the wage being regulated simply by supply and demand, there is another class, which, taking account of the personal equation, sees in it something more than a commodity, and refuses to subscribe to the doctrine that supply and demand alone regulate the price. This latter class of economists refuses to accept the doctrine that a man is rich because he has stored away within him many days' work, and are convinced that his necessities, quite as often as the demand for his labor, fixes the stipend which he is to receive. In other words, the laborer, skilled or unskilled, is not regarded as standing on an equality with him who barters in goods and merchandise. It is not, of course, within the province of courts of justice to adopt or promulgate any particular system of political science; but in the interpretation of statutes they must take notice of current political theory and conviction. If we were to adopt the view so strongly presented by appellant's counsel, it would be on the assumption that the associated words "merchandise" and "commodity" include the wages to be paid for labor, because labor is a sort of merchandise, subject to barter and sale as other goods. A fundamental rule of construction is that, where particular words are followed by general ones, the general are restricted in meaning to objects of a like kind with those specified. (State *v.* Stoller, 38 Iowa, 321; People *v.* Railroad, 84 N. Y. 565; McDade *v.* People, 29 Mich. 50.) Now, the term "merchandise" is special rather than general, and has reference primarily to those things which merchants sell either at wholesale or retail. (Jewell *v.* Board, 113 Iowa, 47, 84 N. W. 973.) "Commodity" is a broader term, and, when used as in the statute now under consideration, means almost any description of article called movable or personal estate. (Barnett *v.* Powell, 16 Ky. 409; Shuttleworth *v.* State, 35 Ala. 415; State *v.* Henke, 19 Mo. 225.)

Used in connection with the term "merchandise," and qualified as it is in the latter part of the section of the words "manufactured, mined, produced, or sold," it is manifest that the statute was not intended to, and did not, include labor either skilled or unskilled. It must be remembered that the statute is a criminal one, and that such statutes must be strictly construed; and, in case of doubt, the construction must be adopted most favorable to the party charged. The only ground upon which appellant can stand with any show of plausibility is that labor is a commodity to be bought, sold, or produced as merchandise. This is a strained and unnatural construction, and gives to the word "commodity" a meaning which is perhaps permissible, but is not the commonly accepted one. Under our statutes, words and phrases are to be construed according to the context and the approved usage of the language. (Code, ¶48.) With this in mind, we are constrained to hold that labor is not a commodity within the meaning of the act now in question. As supporting this conclusion, see Hunt *v.* Riverside Club, 140 Mich. 538, 104 N. W. 40, 12 Detroit Leg. N. 264; Queen *v.* State, 86 Tex. 250, 24 S. W. 397, 22 L. R. A. 483. It seems to be the almost universal holding that it is no crime for any number of persons without an unlawful object in view to associate themselves together, and agree that they will not work for or deal with certain classes of men, or work under a certain price or without certain conditions. (Carew *v.* Rutherford, 106 Mass. 14, 8 Am. Rep. 287; Commonwealth *v.* Hunt, 4 Metc. 134, 38 Am. Dec. 346; Rogers *v.* Everts, 17 N. Y. Supp. 268; United States *v.* Moore (C. C.) 129 Fed. 630.)

The statute in question was aimed at unlawful conspiracies or combinations in restraint of trade, and was manifestly not intended to cover labor unions. It is the right of miners, artisans, laborers, or professional men to unite for their own improvement or advancement or for any other lawful purpose, and it has never been held, so far as we are able to discover, that a union for the purpose of advancing wages is unlawful under any statutes which have been called to our attention. As said by Judge Taft in Phelans Case (C. C.) 62 Fed. 803: "Such unions, when rightly conducted, are beneficial in character." And it would be a strained and unnatural conclusion to hold that a statute aimed at pools and trusts should be held to include agreements as to prices for labor because the word "commodity" is used therein. As the right to combine for the purpose of securing higher wages is recognized as lawful at common law, a statute enacted to prohibit pools and trusts should not be held to apply to combinations to fix the wages for labor, unless it clearly appears that such was the legislative intent. Whatever of doubt there may be regarding the power of the legislature to do so, we do not think that the act in question covers combinations to fix the labor price whether that labor be skilled or unskilled.

Appellants rely largely upon the celebrated cases of Loewe *v.* Lawlor et al, 208 U. S. 274, 52 L. Ed. 488, 28 Sup. Ct. 301, and In re Debs, 158 U. S. 564, 15 Sup. Ct. 900, 39 L. Ed. 1092, and other like cases in support of their construction of the statute; but in our opinion none of these cases are applicable. The Debs Case is not in point. Others involved a pool between manufacturers and still other[s] boycotts. In the Loewe Case defendants were engaged in a boycott of plaintiff and its customers, and were in the performance of acts calculated to destroy plaintiff's business by driving away customers, by threats and coercion were driving away plaintiff's employees, and circulating false reports regarding plaintiff and its business, the effect of which was to destroy its interstate trade. These acts were held to be an unlawful interference with interstate commerce, and a violation of the antitrust law known as the "Sherman Act" (Act July 2, 1890, c. 647, 26 Stat. 209 [U. S. Comp. St. 1901, p. 3200]). The statute before us has nothing to do with commerce; nor does it have to do with restraint of trade or commerce as does the Sherman act. It has to do with pools and trusts organized in this State to fix or regulate the price of any article or commodity, or to fix or limit the amount or quality of any article, commodity or merchandise to be produced or sold in the State. Surely it has no reference to the amount or quality of labor to be produced or sold. Such a construction would be ridiculous. And, if it will not bear that interpretation, it follows that the word "commodity," when used with reference to prices, should not be held to include labor. No case has been cited which supports appellant's contention, and we have not been able to find any. On the other hand, the following lend support to our conclusions: Cleland *v.* Anderson, 66 Neb. 252, 92 N. W. 307, 5 L. R. A. (N. S.) 136; Downing *v.* Lewis, 56 Neb. 386, 76 N. W. 900; State *v.* Associated Press, 159 Mo. 410, 60 S. W. 91, 51 L. R. A. 151, 81 Am. St. Rep. 368. It would be stretching the statute entirely too far to hold that it covers combinations to fix the price of labor. That the practice of medicine and surgery is labor no one, we think, will question.

The trial court was right in discharging the plaintiff, and its judgment must be, and it is, affirmed.

EMPLOYMENT OF CHILDREN—AGE LIMIT—CLEANING MOVING MACHINERY—*Sullivan v. Hanover Cordage Co., Supreme Court of Pennsylvania, 70 Atlantic Reporter, page 909.*—Paul Sullivan was injured while cleaning a machine in the company's factory, and sued by his next friend to recover damages. He was under 16 years of age, and the law prohibits such employment until the age of 16 years is attained. The machine was not in operation, and its only object in being put in motion at the time the injury was received was to aid in the work of cleaning it, and it was contended that this purpose removed the case from the operation of the law. Judgment had been against the company in the court of common pleas of York County, and, on appeal, it was affirmed by the supreme court. The principal point in the opinion, which was delivered by Judge Elkin, is contained in the following paragraph quoted therefrom:

It is argued with much force that the prohibition of the statute is directed against an attempt to clean a dangerous machine while it is in motion in the usual method of operation. In a sense this may be true, but it is the kind of motion, not the purpose, the statute guards against. It does not matter whether the attempt to clean is made when the machine is in motion for the purpose of operation, or whether it is in motion for the purpose of cleaning, if, in point of fact, the motion is of the same dangerous character in both instances. What the statute intended to prohibit was the employment of a boy of immature judgment, without experience and lacking in discretion to perform such dangerous work. We agree that if the machine at the time of the cleaning was not in dangerous motion, such as was usual in its operation, and if the motion, or revolution, at the time of the cleaning, was not dangerous, but simply consisted in partial revolutions made from time to time in order to facilitate the cleaning, the prohibition of the statute would very properly be held inapplicable. On the other hand, if the machine was propelled in the usual manner, and by the same force or power, while being cleaned as was usual when in operation, and if the motion or revolutions were of the same dangerous character, differing only in degree, the court would not be warranted in holding as a matter of law that the prohibition of the statute did not apply. Under such circumstances, it would at least be for the jury to determine whether at the time of the injury the machine was in dangerous motion. All of these questions were submitted to the jury by the learned trial judge in such manner as to enable them to justly determine the rights of the parties to the controversy, and in our opinion appellant has no just cause to complain.

Employment of Children—Certificate of Age—Violation of Statute—Persons Liable—*People v. Taylor, Court of Appeals of New York, 85 Northeastern Reporter, page 759.*—George H. Taylor was convicted in the court of special sessions of New York City of violating that provision of the labor law (Acts of 1897, c. 415, section 70, amended by Acts of 1903, c. 184) which prohibits the employment of children between the ages of 14 and 16 years without having filed a certificate in the employer's office. Taylor was treasurer of the Kursheedt Manufacturing Company, and the superintendent of its factory. One of the state inspectors found a girl employed in the factory who was under 16 years of age and without the required certificate. When Taylor was informed of the fact he stated that he had no knowledge of the violation of the law, and the girl, who had claimed to be over 16 when she was employed, was immediately discharged. Mr. Taylor was then arrested and convicted as above stated. This judgment was affirmed by the appellate division, but was reversed by the court of appeals and the defendant discharged as not being the person liable under the law for its violation.

The opinion of the court, which was delivered by Judge Chase, reads in part as follows:

The defendant was not individually an employer of labor. He was an officer, agent, and employee of the corporation, and responsible to it for the conduct of its business, but, so far as appears, in no way beneficially interested therein. Such an officer, agent, and employee has such powers and performs such duties in the management of the property and affairs of the corporation as may be prescribed by the directors or in the by-laws of the corporation. We assume that the person who owns a factory is liable for a violation of said section of the labor law, if contrary to the provisions thereof a child is employed by such owner, either directly or through an officer, agent, or employee, and wholly without regard to whether the employment is an intentional and willful violation of the statute. The term "person" includes a corporation. The owner, by or for whom the child is employed in violation of the statute, is liable, because such employment is prohibited. The question of intent is immaterial. The person actually entering into the contract by which a child is employed contrary to the provisions of the said section of the labor law is liable therefor, although such person acts as the agent or employee of another, because his act is also contrary to such provision of the statute.

The question directly before us, however, is as to whether an employee of a corporation, who is the superior in authority of another employee of such corporation, is individually liable for such employment in the interest of and for the beneficial purposes of the corporation, when such employment is made by the subordinate without the knowledge or consent of the person charged with the crime, and contrary to his express direction. We think not. The labor law relating to factories does not treat the owner of a factory and the superintendent or manager thereof as equally responsible in all cases for carrying out its provisions.

An examination of all of the sections in the article of the labor law relating to factories shows that it was the intention of the legislature to make an owner, as the person beneficially interested, generally liable for violations of the article, and also to place upon the persons immediately or personally connected with the acts prohibited the responsibility for carrying out the provisions thereof.

There is no provision of the labor law which makes the superintendent of a factory of a corporation liable for the employment of a child under 16 years of age by a foreman or other employee, contrary to express directions given in good faith by such superintendent. The defendant is not in any sense a person who aids or abets such employment in violation of the statutes, or who counsels, commands, induces, or procures such employment. He was not a person who employed, permitted, or suffered the girl mentioned to work in the Kursheedt Manufacturing Company.

The judgment convicting the defendant of the crime violating section 70 of the labor law should therefore be reversed, and the defendant discharged.

HOURS OF LABOR OF EMPLOYEES ON RAILROADS—REGULATION OF COMMERCE—STATE AND FEDERAL STATUTES—CONSTITUTIONALITY—*State v. Missouri Pacific Railway Company, Supreme Court of Missouri, 111 Southwestern Reporter, page 500.*—The company named was indicted in the circuit court of Johnson County for a violation of the law of April 12, 1907 (page 332, Acts of 1907), which limits to eight per day the hours of labor of telegraph operators and train dispatchers in the State of Missouri. The indictment was quashed on the ground of the unconstitutionality of the statute, and the State appealed, the appeal resulting in the judgment of the lower court being affirmed. The federal law, fixing nine hours as the limit for the class of employees involved, was of prior enactment, but was not to take effect until March 4, 1908, and the State's counsel argued, (a) that the state law was controlling for employees engaged in intrastate commerce, and (b) that in any case it was valid from the time for its coming into effect (June 14, 1907) until the federal law should become operative. Various grounds were offered by the company for quashing the indictment, but as the decision of the court rested entirely on the answer to these two claims, the others need not be noted. The court denied both the contentions noted, for reasons which appear in the following extract from its opinion, which was delivered by Judge Lamm:

(1) Assuming for the moment that fairly, i. e., equitably construed in their true spirit and intent, both laws were in effect at the same time, then the question is, may the state law stand as legislation upon intrastate commerce alone? We think not. The exact question in another form was before the Supreme Court of the United States in two cases just decided. (Howard *v.* Railroad, 207 U. S. 463, 28 Sup. Ct. 141; Brooks *v.* Railroad, id.) In those cases that court was construing a federal fellow-servant act, so drawn as not to distinguish between interstate commerce and intrastate commerce. The cases proceed on the theory that the Federal Congress might enact a fellow-servant act which was solely applicable to interstate commerce, but that an act so drawn as not to distinguish between the commercial power of Congress over interstate commerce and those strictly so engaged, and the power of the States to legislate upon intrastate commerce and those strictly engaged in that, could not stand. An analytical examination of the [Missouri] act of 1907 shows that it does not discriminate between telegraph operators assisting in the operation of interstate commerce trains and traffic, and those similarly employed in local trains and traffic. The provisions of the act are interdependent and not separable—it must stand as a whole as written, or fall as a whole. It follows, we think, that on the doctrine of the Howard case and the Brooks case, supra, the state law can no more stand in this case than did the federal law in those cases—provided, of course, the federal act and state law (in just intendment) were in force at the same time, and to that novel question we now address ourselves.

(2) We must construe the federal act by reading into its dry letter its manifest spirit and purpose. Its dry letter reads that it shall not go into effect for one year. What was the meaning of, the object to be subserved by, that suspension of the operation of the law? What, except to preserve the equities of the situation by impliedly giving common carriers engaged in interstate commerce one year in which to get a supply of experienced telegraph and telephone operators and trainmen to carry on their business without interruption and hindrance, and otherwise adjust their business affairs to the shorter hours required by that act? When broadly judged, the federal law must be construed as a notice (in the nature of a caveat) to all state legislatures, first, that Congress has occupied the ground by its statutory regulations; second, that in its high wisdom it has prescribed and marked out a transition or preparatory period of one year (a sort of truce period). Now with such broad and wise purposes read into the federal act shall any state legislature thereafter sit in judgment upon the wisdom of such truce period, and say, in effect, "We deem it too long and too liberal?" If the one law grants, by necessary implication, a breathing spell, shall the other take it away? If the one chalks out a policy, may the other rub it out?

In our opinion the comity that should exist between state and federal legislative power prohibits our taking that ungracious and narrow view.

It follows that the order quashing the indictment may be sustained on the ground herein discussed. Whether the motion to quash could be sustained also upon other grounds, is not necessary for us to decide in this case. Accordingly all other questions raised by that formidable motion are reserved. The judgment of the lower court is affirmed.

HOURS OF LABOR OF EMPLOYEES ON RAILROADS—REGULATION OF COMMERCE—STATE AND FEDERAL STATUTES—VALIDITY—*State v. Chicago, Milwaukee and St. Paul Railway Company, Supreme Court of Wisconsin, 117 Northwestern Reporter, page 686.*—The railroad company named was found guilty in the circuit court of Milwaukee County of violating chapter 575 of the Laws of 1907, which limits to eight per day the hours of labor of telegraph operators, including train dispatchers, and appealed. The question turned on the validity of the statute, in view of the prior enactment of a statute by the Congress of the United States on the subject of the hours of labor of employees engaged in interstate commerce. The supreme court held that the federal law was valid and controlling, to the practical exclusion of state legislation on the subject. The state law was therefore declared invalid, and the judgment of the lower court was reversed.

The grounds for this ruling are set forth in the following extracts from the opinion of the court, which was delivered by Judge Dodge:

The primary and most earnestly argued question is whether the act (Laws 1907, p. 1188, c. 575, sec. 1816m) prohibiting a corporation, operating a line of railroad in whole or in part in this State, to require or permit any (telegraph or telephone) operator (including train dispatcher) to remain on duty for more than one period of eight consecutive hours, so regulates interstate commerce intentionally or by necessary effect that it invades the power conferred upon Congress by article 1, sec. 8, Const. U. S., "to regulate commerce with foreign nations, and among the several States, and with the Indian tribes," that it can not stand.

The mere fact that in some degree interstate commerce is affected by the act of a state legislature is not universally sufficient to condemn that act.

On the other hand, state legislation is prohibited which directly and intentionally controls and regulates interstate commerce, as, for example, an act which in terms regulates freight or passenger charges for interstate carriage, or which imposes a direct prohibition or charge upon the importation of property from one State into another.

Between these two extremes, however, lies a broad field for legislation claimed to be justified by necessary protection of the safety of the local community, which more or less directly obstructs, restrains, and regulates the transaction of interstate commerce—legislation not enacted for that purpose, but incidentally having the result. The Supreme Court of the United States, in Covington B. Co. *v.* Kentucky, 154 U. S. 204, 14 Sup. Ct. 1087, has classified that field into three classes of legislative acts: The first, where the States have plenary power and Congress has no right to interfere, which concern the strictly internal commerce of the State, and, while the regulation may affect interstate commerce indirectly, its bearing is so remote that it can not be termed in any just sense interference. The second includes cases of what may be termed "concurrent jurisdiction," where the States may act in the absence of congressional action. Obviously this field must be one where Congress has right and power to act if it sees fit, but where some restraint and regulation is necessary, and the authority therefor is deemed to be conceded to the States pending nonaction of Congress. The third is the class where, from the very intimacy with and directness of effect upon interstate commerce of any legislative action, and national scope of the subject of legislation, it is presumed that the refraining of Congress from promulgating any regulations must be considered to declare a policy that the subject shall be free from regulation.

Pretty obviously, under the decisions of the Supreme Court of the United States, the act we are considering must fall in the second class. The safety of the public may be so imperiled by the employment of incompetent or disabled persons in and about railroads, navigation, and the like that the necessity for some legislation in regard thereto is manifest, and the forbearance of Congress to legislate might well be deemed significant of its policy to leave the subject of regulation to the legislatures of the several States. In this line it has been held that examination of pilots or railroad engineers with reference to physical capacity, especially color blindness, as a condition of their employment, is competent for a State.

We can not doubt that prohibition of an overfatigued telegraph operator from directing the operation of trains falls within the State's power to control, even though thereby the conduct of interstate commerce might be impeded or burdened. But this power in the States is subject to that provision in the Constitution that Congress shall have power to regulate interstate commerce; that is, to prescribe the restrictions and limitations under which it shall be conducted, and when it prescribes those regulations it does so to the exclusion of state legislation accomplishing a like regulation directly or indirectly and whether intended for that purpose or not.

On March 4, 1907, before the act now under consideration was passed, and even before it was introduced in the Wisconsin legislature, Congress had legislated fully upon the subject of hours of labor for the very class of employees affected by section 1816m. It then provided (act March 4, 1907, p. 1415, c. 2939, 34 Stat. 1415 [U. S. Comp. St. Supp. 1907, p. 913]), that it should be unlawful for any common carrier subject to the act to require or permit any employee subject to the act to be or remain on duty for a period longer than 16 consecutive hours, and that no operator or train dispatcher should be required or permitted to remain on duty for a longer period than 9 hours in any 24-hour period in places continuously operated night and day, nor for a period longer than 13 hours in places operated only during the daytime, with exceptions in case of emergencies. This was a clear declaration by Congress of a will and policy that, so far as the regulation and safeguarding of interstate commerce might properly be affected by prescribing hours of labor for such employees, the subject should be under control of Congress, and not of the state legislatures. Doubtless the state legislatures persisted in their power to protect the safety of their respective communities by reasonably regulating the hours of service of railroad employees, with the limitation, however, that they must not thereby restrict or effectively regulate interstate commerce. Under many of the decisions above cited the State was thereby precluded from enacting any law of that sort which would have that effect, for the field of policy and legislation was thus assumed by Congress and withdrawn from state competency. (State *v.* Mo., etc., Ry. (Mo.) 111 S.W. 500.)

Apart from this view, however, it is too obvious to need more than the statement that the legislation fixing 9 and 13 hours, respectively, as the permitted term of employment, was a declaration of a federal policy on that subject, and that a state law excluding interstate railways from the use of their employees on interstate commerce for 1 of the 9 hours or for 5 of the 13 hours would be in direct conflict with that policy. The absence of such an employee at a small station upon an interstate road might well be a most serious inconvenience and burden upon both the celerity and safety of interstate commerce past that station, and requirement of such absence would be in direct antagonism to the policy of the federal law permitting presence and employment. Not less obviously the act of Congress declared a policy that interstate railroads should have a reasonable time in which to adjust their business to the new restrictions, by postponing the date when the law should become operative for one year after its passage, thus indicating that such period of time was so necessary to reasonable convenience of interstate commerce. Indeed, this latter implication is not only clear from the act, but made the more certain by reference to the debates and reports of committees attending the consideration and passage of the law of Congress. Hence a state provision to the effect that the time for such preparation and adjustment should be restricted to the 1st of January, 1908, as contained in chapter 575, p. 1188, Laws of 1907, is in direct conflict with the policy of Congress. (State *v.* Mo., etc., Ry., supra.) We are therefore constrained to the conclusion that restriction of hours of labor of telegraph operators engaged in moving interstate trains or traffic is a field of legislation forbidden to the States by the federal Constitution, but also that the limitation contained in our statute is in conflict with and in negation of the act of Congress, and can not be enforced as to such employees.

The further contention is made by the respondent that, even if it be beyond the power of the State to restrict the services of an operator engaged in moving interstate trains, it is competent to so restrict as to one engaged exclusively upon trains or business wholly within the State, and that the law may be construed as so limited, and its validity as so limited be sustained. The principle invoked is doubtless sound, if it is reasonably possible to separate the permissible from the forbidden, and to believe that the legislature intended by the act to effect the one and omit the other.

Chapter 575, p. 1188, Laws of 1907, in terms is directed to every corporation operating a line of railroad, in whole or in part, in the State of Wisconsin, thus expressly including those who are engaged in interstate commerce. But it is also open to the other objection, held to be fatal, that it restricts the employment of all operators, without discrimination as to the character of their services. It is matter of common knowledge, and is set up as a fact by the answer, that any operator who works upon trains or transportation wholly within the State also necessarily and at the same time works upon interstate trains and transportation. (State *v.* Mo., etc., Ry., supra.) The state legislature has in terms undertaken to restrict hours of work of employees engaged in safeguarding and conducting interstate commerce, as well as domestic; and, controlled as we must be by the decision of the federal Supreme Court, we can not import a meaning contradictory to the express words. Neither can we feel any certainty that the generality of the restriction was not an essential element in the entire legislative scheme, so that we might believe the legislature would have imposed upon domestic commerce, or on employees exclusively engaged therein, burdens not also resting on entirely similar acts of employees involving interstate trains or commerce.

We think the impracticability, if not impossibility, of limiting hours of work devoted to domestic commerce alone is so obvious as to preclude belief in any such legislative purpose. Hardly any act of a train dispatcher on a busy railroad can be conceived which does not affect both interstate and domestic commerce. He can not move or stop the most distinctively local train without affecting the interstate train, or vice versa. No extra or special can be put on the division without adjustment of other trains. Of course, also, every interstate train carries some purely intrastate freight or passengers. Many purely domestic trains carry some freight or passengers in transit to extrastate destination. It would seem that any severance of control over state from interstate trains involved so much of confusion and probability of danger, and its possibility even is so doubtful and experimental, that no legislature would absolutely precipitate it without careful consideration, nor without providing in the act for the event of the failure of such experiments. For this reason as well we are convinced that the legislative purpose involved what the legislative words include, the regulation of services of all operators, and would in nowise be satisfied, even in part, by a restriction to those whose acts affect only domestic commerce, if, indeed, there are any such.

The court then discussed the contention that the federal act is unconstitutional on the same grounds that the earlier law was so held (207 U. S. 463, 28 Sup. Ct. 141. [Bulletin No. 74, p. 216]), saying in part:

It is entirely natural and probable that an attempt would have been made to differentiate the latter enactment from the former one, and to escape the somewhat technical ground of invalidity in the former. It is without surprise, therefore, that we find such differentiating provision in the first section, to the effect "that the provisions of this act shall apply to any common carrier or carriers, their officers, agents and employees, engaged in the transportation of passengers," etc., between the several States, and also: "The term 'employees' as used in this act shall be held to mean persons actually engaged in or connected with the movement of any [interstate] train." It will also be noted that the hours of employment are prescribed for "any employee subject to this act." We can not doubt that by these phrases the operation of the present act was limited, not only to employers engaged in interstate commerce, but to the conduct of employees so engaged, to the exclusion of any who might be engaged purely in the domestic affairs of the employer, and that by this very distinction and limitation of the application of the act the legislation is brought within that portion of the decision which holds that the employer's liability act would have been valid had it been confined in application to the relation of employees while engaged in interstate commerce. (207 U. S. at page 496, 28 Sup. Ct. 141, 52 L. Ed. 297.)

Since our conclusion is fatal to chapter 575, p. 1188, Laws of 1907, no possible necessity for or benefit from a new trial can result. Hence:

Judgment reversed, and cause remanded, with directions to enter judgment for the defendant.

HOURS OF LABOR ON PUBLIC WORKS—EIGHT-HOUR LAW—CONSTITUTIONALITY OF STATUTE—*People ex rel. Williams Engineering and Contracting Company v. Metz, Court of Appeals of New York, 85 Northeastern Reporter, page 1070.*—The company named was a contractor engaged in constructing a sewer in the city of New York. After the completion of a part of the work, request was made for payments under the contract aggregating more than $14,000. The attention of the comptroller of the city had been called to alleged violations of the labor law, which limits to eight per day the hours of labor of employees on work for the State or a municipal corporation, or by contractors or subcontractors therewith; the law also prescribes the payment of locally current rates of wages, and prohibits payment for work done in violation of the provisions named. Violations having been shown, the comptroller refused to pay the sum demanded, whereupon the company sued and secured a writ directing payment. This was appealed from by the comptroller and was reversed in the court of appeals.

The chief contention, and the only one that was of force, was that the law was unconstitutional, the facts of its violation not being disputed. The court considered only the single point of the limitation to eight hours of work per day, and the prohibition of payment where the law was violated, since the claim of the company would be extinguished if the law should be upheld in these respects, regardless of its other provisions. A law of like import had been passed in 1897, and declared unconstitutional in 1901, according to the constitution as it then stood, first, because it required the expenditure of money of the city or that of the local property owners for other than city purposes; second, because it invaded rights of liberty and property, in that it denied to the city and the contractor the right to agree with their employees upon the measure of their compensation.

(People ex rel. Rodgers *v.* Coler, 166 N. Y. 1, 59 N. E. 716 [Bulletin No. 35, p. 805]; People ex rel. Treat *v.* Coler, 166 N. Y. 144, 59 N. E. 776 [Bulletin No. 40, p. 615].)

(See also People *v.* Orange County Road Construction Co., 175 N. Y. 84, 67 N. E. 129 [Bulletin No. 50, p. 181]; People ex rel. Cossey *v.* Grout, 179 N. Y. 417, 72 N. E. 464 [Bulletin No. 57, p. 687].)

The constitution of the State was subsequently amended so as to give the legislature authority to regulate and fix wages or salaries and the hours of labor, and make provision for the protection, welfare, and safety of persons employed on public works. The legislature availed itself of the authority thus conferred and reenacted the material parts of the earlier law as chapter 506 of the Acts of 1906, the amendment to the constitution having come into effect on January 1 of that year. Judge Vann, who delivered the opinion, speaking for an undivided court, stated the facts set forth above and enumerated the cases cited above saying that they do not apply to the constitution in its amended form. Continuing, he said:

> The constitution, as construed by these decisions and others, was amended because it did not confer power upon the legislature to fix and regulate the hours of labor in doing public work or the wages to be paid therefor. When, therefore, the constitution as it stood before it was amended is read in connection with the amendment and in the light of the judicial decisions which led thereto, it is clear that the people intended to authorize such legislation as the provision relating to hours of labor now under consideration. The legislature acted under the amendment and reenacted the precise law the overthrow of which by the courts made the amendment necessary. These provisions of the constitution which were violated by the labor law of 1897 were not violated by the labor law of 1906, so far as we are now treating it, because in the meantime the constitution had been so amended as to modify said provisions by authorizing the legislature to regulate and fix the hours of labor upon public work. Unless the amendment did this it did nothing, and the constitution is the same in effect as it was before. The presumption is that the people in exercising their supreme power did not do a vain act, but effected a definite purpose.
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> Freedom of contract still exists, but not to the same extent as formerly, because the people have commanded that that right must yield so far as reasonably necessary to enable the legislature to fix and regulate the hours of labor on work done for the State or any civil division thereof. The same is true of the other provisions of the constitution which were relied upon by us in passing on the labor law of 1897. Every provision of the constitution as it was before it was amended which so conflicts with the amendment that it can not be fairly harmonized therewith, necessarily yields thereto, but only to the extent necessary to make the amendment reasonably effective.
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> As the legislature has power to regulate and fix the hours of labor on public work, it has the incidental power to compel obedience to its

commands by mild or severe penalties, as it sees fit. The method of enforcement is for it to determine. It can make violation a crime punishable by fine or imprisonment, or both, or provide for a forfeiture of the contract, or prohibit payment for work done thereunder. All this is within its sound discretion. The prohibition of payment under certain circumstances by the civil service law is quite analogous. The legislature is not required to act under the amendment at all, and any action taken, if unsatisfactory to the public either in principle or detail, can be retracted at any time in response to public opinion. If the legislation retards public improvements or increases municipal debts, or does not work well in other respects, there is ample room for public sentiment to act through the chosen representatives of the people.

Our conclusion upon this branch of the case is that, in view of the history of the amendment in question and the causes which led to it, the legislature now has power, and had when the present labor law was enacted, to fix and regulate the hours of labor on public work by limiting them to eight hours in one calendar day, and to provide that when that limit is exceeded no officer of state or municipal government shall be permitted to pay therefor from funds under his official control. We do not uphold the labor law as constitutional, to the limited extent that we pass upon it at all, because it is authorized by the police power which belongs to the State for we can not see that it bears any reasonable relation to the public health, safety, or morals. The reasoning of Chief Judge Cullen in the Orange County road case is conclusive upon that subject. (People *v.* Orange County Road Construction Company, 175 N. Y. 84, 87, 67 N. E. 129, 65 L. R. A. 33.) We uphold the statute simply because the people have so amended the constitution as to permit such legislation. The command of the people made in the form prescribed by law must be enforced by the courts.

It is claimed that the labor law violates the first section of the fourteenth amendment to the Constitution of the United States in so far as it provides that "no State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws."

It is urged that the labor law makes discriminations when there are no differences; that it arbitrarily discriminates between persons employed by private individuals and those employed by the State or by municipal corporations, and with no adequate reason exempts from the latter three classes of persons. It is insisted that it is a capricious distinction to permit a laborer digging ditches for a farmer to agree to work 10 hours a day, while if he does the same kind of work just across the line for a city he can not agree to work more than 8 hours, even if he wishes to work longer and the city is willing to pay him all he asks.

One purpose of the fourteenth amendment is to prevent state legislatures from making discriminations without any basis; in other words, to do away with class legislation. Following the decisions of the Supreme Court of the United States upon the subject, we have held that there must be some basis for classification, but that a basis is sufficient, even if it seems unreasonable to the courts, provided there is reason enough for it to support an argument so that it could have seemed reasonable to the legislature. (People ex rel. Hatch *v.* Reardon, 184 N. Y. 431, 77 N. E. 970; People ex rel. Farrington *v.* Mensching, 187 N. Y. 8, 79 N. E. 884.)

In the latter case we said that "there must be some support of taste, policy, difference of situation, or the like, some reason for it, even if it is a poor one. * * * The court must be able to see that the legislators could regard it as reasonable and proper without doing violence to common sense."

It is to be observed that the amendment to our state constitution which we have had under consideration relates only to public work, or work done for the State or for one of the political divisions created by the State, such as a county, city, town, or village. The labor law follows the constitution as amended in this respect. In other words, the State was dealing with itself and with its own creatures when its legislature passed that portion of the labor law that we are now considering.

We regard discussion of the question involving discrimination between persons employed by private individuals and those employed by municipal corporations as foreclosed by the decision of the Supreme Court of the United States in Atkin *v.* Kansas, 191 U. S. 207, 220, 24 Sup. Ct. 124. [See Bulletin No. 50, p. 177.] That case is directly analogous, for it involved the constitutionality of a statute of the State of Kansas which provided that eight hours should constitute a day's work for all laborers employed by or on behalf of the State or any of its municipalities, and made it unlawful for anyone thereafter contracting to do public work to require or permit a laborer to work longer than eight hours a day. A violation of this provision was made a crime punishable by a fine of not less than $50 nor more than $1,000, or by imprisonment not more than six months, or by both such fine and imprisonment in the discretion of the court. The plaintiff in error, a contractor for public work in Kansas City, was convicted of permitting one Reese, an employee, to voluntarily work 10 hours a day laying a pavement, and was fined $100. The conviction was sustained. In that case, as in this, counsel argued that, "if a statute such as the one under consideration is justifiable, should it not apply to all persons and to all vocations whatsoever? Why should such a law be limited to contractors with the State and its municipalities? Why should the law allow a contractor to agree with a laborer to shovel dirt for 10 hours a day in the performance of a private contract, and make exactly the same act under similar conditions a misdemeanor when done in the performance of a contract for the construction of a public improvement? Why is the liberty with reference to contracting restricted in the one case and not in the other?"

The court, after reciting these questions asked by counsel, answered them as follows: "These questions, indeed the entire argument of defendant's counsel, seem to attach too little consequence to the relation existing between a State and its municipal corporations. Such corporations are the creatures, mere political subdivisions of the State for the purpose of exercising a part of its powers. They may exert only such powers as are expressly granted to them, or such as may be necessarily implied from those granted. What they lawfully do of a public character is done under the sanction of the State.

They are, in every essential sense, only auxiliaries of the State for the purposes of local government. They may be created, or, having been created, their powers may be restricted or enlarged or altogether withdrawn at the will of the legislature; the authority of the legislature, when restricting or withdrawing such powers, being subject only to the fundamental condition that the collective and individual rights of the people of a municipality shall not thereby be destroyed. * * * If, then, the work upon which the defendant employed Reese was of a public character, it necessarily follows that the statute in question, in its application to those undertaking work for or on behalf of a municipal corporation of the State, does not infringe the personal liberty of anyone * * * Whatever may have been the motives controlling the enactment of the statute in question, we can imagine no possible ground to dispute the power of the State to declare that no one undertaking work for it or for one of its municipal agencies should permit or require an employee on such work to labor in excess of eight hours each day, and to inflict punishment upon those who are embraced by such regulations and yet disregard them. It can not be deemed a part of the liberty of any contractor that he be allowed to do public work in any mode he may choose to adopt without regard to the wishes of the State. On the contrary, it belongs to the State, as the guardian and trustee for its people, and having control of its affairs, to prescribe the conditions upon which it will permit public work to be done on its behalf, or on behalf of its municipalities. No court has authority to review its action in that respect. Regulations on this subject suggest only considerations of public policy, and with such considerations the courts have no concern.

If it be contended to be the right of everyone to dispose of his labor upon such terms as he deems best, as undoubtedly it is, and that to make it a criminal offense for a contractor for public work to permit or require his employee to perform labor upon that work in excess of eight hours each day is in derogation of the liberty both of employees and employer, it is sufficient to answer that no employee is entitled, of absolute right and as a part of his liberty, to perform labor for the State; and no contractor for public work can excuse a violation of his agreement with the State by doing that which the statute under which he proceeds distinctly and lawfully forbids him to do." This decision was cited with approval in the somewhat analogous case of Ellis *v.* United States, 206 U. S. 246, 255, 27 Sup. Ct. 600. [Bulletin No. 71 p. 361.]

We close this branch of the discussion by quoting from the latest utterance upon the subject by the court of last resort upon federal questions to which our attention has been called. "It is undoubtedly true, as more than once declared by this court, that the general right to contract in relation to one's business is part of the liberty of the individual, protected by the fourteenth amendment to the Federal Constitution; yet it is equally well settled that this liberty is not absolute and extending to all contracts, and that a State may, without conflicting with the provisions of the fourteenth amendment, restrict in many respects the individual's power to contract." (Muller *v.* Oregon, 208 U. S. 412, 421, 28 Sup. Ct. 324, 52 L. Ed. 551.)

The relator claims that it is denied the equal protection of the laws because all in the same class are not treated alike, inasmuch as persons regularly employed in state institutions, engineers, electricians, and elevator men in the department of public buildings during the annual sessions of the legislature, and those engaged in the construction, maintenance, and repair of highways outside the limits of cities and villages, are exempted from the operation of the labor law.

We do not regard this classification as arbitrary or capricious within the rule governing the subject, for it has some reason to support it, and hence was within the power of the legislature. Employees with duties to be discharged in the nighttime, or partly by day and partly by night, as in asylums, prisons, and the like, and those who operate the machinery for heating and lighting the state capitol when the legislature is in session, may properly receive separate classification in order to prevent public injury and inconvenience. Here, also, the State was dealing with its own agencies, and had the right to promote its convenience and welfare by making a distinction between those who perform manual labor for the most part and those who work largely with their brains. The one class of duties involves greater bodily fatigue than the other, and, as positions in state institutions are regarded as higher in rank and less exacting, they are eagerly sought for as more desirable.

The exemption of those employed in working upon highways outside the limits of cities and villages, apparently applies only to employees of counties and towns, or of the State, or contractors therewith, as in building and repairing state roads and the like. This is in conformity with the custom in rural districts, where, as it may be argued, the crops could neither be planted or gathered by laboring but eight hours a day. The reason for the distinction may not be conclusive, but it will support an argument, which is sufficient. Moreover, the employees in the exempt classes, as a rule, work away from home, under circumstances, conditions, and surroundings which differ from those affecting employees working near their homes in cities and villages. The law requires equality only among those similarly situated, and this rule, we think, was observed by the statute in question.

We have thus considered the subject of discrimination along the line of discussion adopted by counsel, but we regard it as of slight importance in this case because in the legislation in question the State was dealing with its own creations and could discriminate as it saw fit.

We think that, upon the facts as presented by the record before us, the comptroller was prohibited by a valid statute from paying any part of the relator's claims, and hence the orders below directing him to do so must be reversed and the proceeding dismissed, with costs in all courts, without prejudice to an application for an alternative writ of mandamus or to the institution of an action to recover the claim.

Interference with Employment—Damages for Procuring Discharge—Measure—Grounds—Rights of Labor Organizations—*Carter v. Oster et al., St. Louis, Mo., Court of Appeals, 112 Southwestern Reporter, page 995.*—Frank Carter, a nonunion workman, sued Otto Oster and others, members of Local Branch No. 29 of the National Association of Steam and Hot Water Fitters of America, to recover damages for maliciously procuring his discharge from employment. He had recovered judgment in the St. Louis circuit court, which court afterwards granted a new trial, and from this order granting a new trial Carter appealed. The court of appeals agreed with the circuit court in ordering a new trial. The opinion contains the facts and reviews a number of cases affecting the rights of organized labor, and is in large part reproduced.

Judge Goode, speaking for the court, said:

Plaintiff is by trade an ammonia, steam, and hot water fitter, and at the dates hereafter mentioned had followed that employment for about 12 years. Defendants are alleged to be, and the proof tends to show they are, members of a trade union in the city of St. Louis denominated "Local Branch No. 29 of the National Association of Steam and Hot Water Fitters of America." This association and a score or more of other trades unions connected with the building and equipment of houses are affiliated with a larger association called the St. Louis Building Trades Council. The membership of the latter body consists of about 40 representatives from each of the different trades unions of the city, whose members follow crafts connected with the construction and equipment of buildings. The St. Louis Building Trades Council, as shown by the preamble to its constitution and by-laws, is designed to control all work on, and all workmen who have anything to do with the building and repairing of houses "from the foundation to the roof." Artisans, such as carpenters, plumbers, steam fitters, and others, are required by said constitution and by-laws to be members of their respective trades unions, and to have a card or license from the central organization, the St. Louis Building Trades Council, in order to be recognized by the latter or by union men, or have the benefits expected to be obtained by the organization of this branch of labor. Business agents, or walking delegates, were appointed by the different unions for the performance of several duties, of which one was to ascertain when and where nonunion workmen were employed by building contractors. Two of these agents or delegates who served said Local Branch No. 29 of Steam and Hot Water Fitters were defendants, John Reigert, jr., and Henry Brammeyer, who appear prominently in the evidence as the active agents in causing the grievances of which plaintiff complains. The evidence in the record, including the constitution and by-laws of the Building Trades Council, shows that the purpose of both said council and the subordinate unions which it dominates was to gather into a compact and effective organization all building mechanics for mutual assistance, so as to remove injurious competition, prevent the interference of outside influence in the building business, shorten the hours of labor, protect the members of each craft against encroachments by the advance of science and invention on their ability to earn a livelihood, cooperate with other labor associations for defense against the misuse of capital, effect adjustments between employers and employees, and generally to secure improvement in the condition of artisans. Section 3 of article 6 and section 5 of article 7 of the constitution and by-laws make plain that one purpose of the Building Trades Council was to induce building contractors to employ as laborers only union mechanics by insuring the contractors a certain measure of immunity from strikes, and by forbidding men to work on any job where work was done by nonunion men, or while grievances between a union and a contractor were unsettled. When the business agents or walking delegates of Local Branch No. 29 of the Steam and Hot Water Fitters, or the agents of the Building Trades Council, discovered a nonunion artisan at work on a job where union men were also employed, the agents would demand of the contractor or employer that the nonunion workman be discharged, and also compel such contractor to pay a fine for having employed him; and in this way the contractors were coerced into employing only union workmen. The evidence tends to show, too, that, in furtherance of this aim, threats of bodily harm to nonunion men and verbal abuse of them were occasionally resorted to by members of the union and sometimes carried out; but as to how far such violent methods were indorsed by the order or were acts of individual passion is not conclusively shown. The foregoing is a correct statement in a general way of the purposes and usages of the trades organizations with which the testimony deals.

In December, 1903, plaintiff Carter was at work for the Missouri Heating and Construction Company at wages of $5.50 a day for eight hours' work. While he was installing an ammonia plant for his said employer on Morgan street, Riegert and Brammeyer discovered him. The Missouri Heating and Construction Company had in its employ at the time union mechanics connected with said Local Branch No. 29, and Brammeyer and Riegert, walking delegates of said branch, notified Barr, the manager of the Missouri Heating and Construction Company, to discharge Carter and another nonunion workman who was in the company's employ on pain of a strike by the union men. Carter and the other workman were discharged, in consequence of this notice, on December 24. Afterwards Riegert and Brammeyer served notice on Barr that his company had been fined $200 for employing Carter. Barr at first refused to pay the money, but the union men in the company's employ quit work forthwith, and the company was compelled to pay in order to go on with its contract. After his discharge by the Missouri Heating Company and until February 29, 1904, when the present action was instituted, Carter procured work from several contractors, who, in turn, were forced by the action of Local Branch No. 29 to discharge him after he had worked a day or two, and in one or more instances fines were imposed on the contractors for employing him. His last job was on some work at the Louisiana Purchase Exposition grounds, and for a contractor by the name of Burgrobe. Burgrobe was compelled to dismiss the plaintiff by a strike of the union men instigated by said local branch's walking delegates, and on this occasion the evidence tends to show that plaintiff was menaced with an assault by union men and forced to call on the guards of the fair grounds for protection. After this he made an arrangement with a contractor by which the two were to do business on their own account, and plaintiff was to get a commission for his work; but the unions prevented them from getting any business. The essence of the testimony is that plaintiff's employers were forced to discharge him in from three to five instances between December 24, 1904 [3], and February 29, 1905 [4], by threats of strikes and fines, that contumelious epithets were applied to him by union workmen, and threats of violence, and that he was told he would not be allowed to work on jobs. It is alleged that the wrongful and coercive methods of the defendants are still in force, and all employers of such labor as plaintiff performs have been terrorized into refusing to employ plaintiff, who, therefore, can obtain no work, and is held up to scorn and ridicule by defendants and other workmen. To recover for these torts to his person, and interferences with his means of getting a livelihood, all alleged to have been wrongfully, maliciously, and willfully made, plaintiff prayed damages; and under the instructions of the court the jury returned a verdict in his favor for $750 actual and $250 punitive damages. The court granted a new trial on two grounds. The first was that error had been committed in the reception of evidence of an assault made by one Malloy on a nonunion workman named Hoblitzell. Malloy is not a defendant, but was a member of Local Branch No. 29. Hoblitzell had worked with plaintiff for the Missouri Heating and Construction Company, and was assaulted by Malloy on the street. Plaintiff was not connected with this episode, and no doubt it was irrelevant, and evidence about it ought to have been rejected; but, in view of the abundant evidence to prove the acts for which plaintiff asks redress, the irrelevant testimony in question is hardly ground for setting aside the verdict. The other ground on which the court sustained the motion for a new trial is that the instruction on the measure of damages was erroneous, in that it permitted plaintiff to recover, in case of a verdict for him, not only his pecuniary loss, but for mental pain and suffering due to fear, anxiety, wounded feelings, and distress of mind caused by defendants' tortious acts.

1. Counsel for defendants contends no case was made for the jury, and insists that we pass on the question of whether there was or not. His position is that at the utmost, whatever was done by defendants, or any of them, which caused plaintiff to lose employment, was within their lawful rights, and therefore afforded no ground of action. Perhaps this position would be tenable, if, as counsel says, the evidence showed no more than that the members of Local Branch No. 29 of Steam Fitters, acting through their delegates, caused members of that order to cease working for contractors when plaintiff was employed on the job. The lower court instructed the jury that it was not unlawful or a conspiracy for workmen merely to combine together to quit an employment, unless an adjustment of differences between themselves and their employer was made, nor to refuse to associate or work with any man they saw fit. Many decisions, and perhaps the weight of authority, uphold the right of employees, either individually or in combination, to quit working because some fellow-servant is obnoxious to them when they are not governed by a contract of service of definite duration. This is on the principle that employees may choose both their employer and their working associates; and it may well be that, if not under contract, they may leave an employment when they please for any purpose they conceive to be for their welfare, or likely to aid in the amelioration of the lot of the laboring classes, if their conduct is dominated by such a motive rather than by a malicious desire to injure someone else. In recognition of this principle, the right of artisans to strike for an increase of wages or for shorter hours, or because a coemployee is obnoxious to them, has been often adjudged, though perhaps it can not be said that the current of authority is unbroken in favor of the

right to strike when the immediate purpose is to cause the discharge of an obnoxious fellow-servant, even though the ultimate purpose may be the attainment of better economic and social conditions.

But there can be no difference of legal opinion on one proposition—that third parties are answerable for keeping a man out of employment when the means employed to do so are unlawful—and on this all the authorities agree. (Moran *v.* Dunphy, 177 Mass. 485, 59 N. E. 125, 52 L. R. A. 115, 83 Am. St. Rep. 289; 1 Tiedeman, State & Fed. Cont. 440.) In the present case we have no occasion to inquire concerning the responsibility of the defendants further than to ask if the methods resorted to by them to prevent plaintiff from obtaining and retaining employment were illegal. It was proved that as soon as he was known to have work on a job the agents of Local Branch No. 29 would notify his employer to discharge him on pain of a strike, and would, moreover, extort from the employer a heavy fine for having hired him. The activity of the building business in St. Louis and the demand for labor were so great that contractors were coerced into dismissing Carter. If they refused to do that or to pay the fine, the union men in their service would strike, thereby preventing them from completing their contracts, and threatening them with losses and perhaps ruin. A sort of duress was brought into operation which contractors were powerless to resist.

Not every threat of a strike, or other attempt to intimidate, will afford a cause of action to an employee who is discharged in consequence of it. The threat must be of a substantial character, and adapted to influence a person of reasonable firmness and prudence. (1 Eddy, Comb. sec. 504.) In so far as Carter was kept out of work by threats of violence to his person, his case is within the statute; for interference in that manner with employment is a statutory crime. (R. S. 1899, sec. 2155.) Plaintiff was also molested by offensive remarks and abusive epithets. These acts may have exerted an influence over contractors, as well as the threats to strike, and have been partly instrumental in causing him to be discharged. As to the tortious and illegal character of such conduct, see 1 Eddy, Comb. sec. 506; O'Neil *v.* Behanna, 182 Pa. 236, 37 Atl. 843, 38 L. R. A. 382, 61 Am. St. Rep. 702. Procuring plaintiff's dismissal from various employments by means of strikes, and the extortion of penalties from contractors, were adopted as methods of preventing him from following his trade, and were likewise illegal. No doubt the members of the union had an economic purpose in view, namely, to unionize all building craftsmen, and thereby render laborers more independent in treating with contractors and capitalists. We need not decide whether or not it was unlawful for the defendants simply to cause a strike in order to procure plaintiff's discharge; for we have the further fact that money was extorted from those who gave him work, which was a method of intimidating contractors, devoid of semblance of legal right. We have found no case on the subject wherein either the point in decision or the reasoning of the opinion would tolerate such methods of depriving a workman of employment. Nor is it material that plaintiff may not have been dismissed from a service wherein he was hired for a definite time. If his discharge was procured by the defendants by illegal methods when otherwise he would have been retained by his employers, his cause of action is complete;

this being one phase of the general doctrine that third parties are liable for inducing breaches of contracts by unlawful methods. [Cases cited.]

2. On some phases of the evidence we think plaintiff would be entitled to damages for mental suffering. If nothing more was established than that defendants tortiously induced breaches of his contracts of employment, thereby keeping him idle, perhaps his damages might be confined to what he would have earned if at work. This is the general rule for the measurement of damages in an action for a wrongful discharge from service. (2 Wood, Master and Servant, 246.) But, as already said, the testimony conduces to show the conduct of the defendants was not only wrongful, but willful, malicious, and oppressive; and it is generally held that the mental suffering due to torts of that nature is an element of damages. Defendants' counsel contends there can be no award for mental suffering unconnected with a physical injury, which is true in actions for negligent wrongs, and wherein the conduct of the defendants does not exhibit malice, insult, or inhumanity. (Trigg *v.* Railroad, 74 Mo. 147, 41 Am. Rep. 305.) But there are torts of which mental distress is the proximate and natural result, and for which damages may be assessed. Such are malicious prosecutions, slanders, and willful trespasses to the person, either with or without physical injury; for instance the unlawful ejection of a passenger from a train.

We have found no case in which the question was raised regarding the right to such damages for wrongfully and maliciously keeping a person out of employment. But a man's trade and the contracts by which he is employed to exercise it are in the nature of property. He has the right to use the former and get the benefit of the latter without tortious interference. We see no reason why the rules applicable in actions for injuries to tangible property should not be applied in the case of an active and relentless conspiracy to prevent a mechanic from earning a living. It is true the present action is neither on a contract for its breach, nor is it, strictly speaking, for an injury to property. It sounds in tort for acts done pursuant to a conspiracy to prevent the plaintiff from following his trade. There is evidence to prove the methods employed to bring about this result were, as we have seen, unlawful; and moreover, that they were continuous, willful, malicious, oppressive, and well adapted to cause plaintiff fear and anxiety about both his personal safety and his means of earning a livelihood. The evidence tended to show the defendants or some of them, cherished a bad animus toward him. He had applied for and been refused admission to the order, though the testimony goes to show he was a competent workman, and certainly he never was discharged for lack of skill. After his application for membership in the union had been denied, he was followed by the delegates, and his contracts of employment interfered with in every instance. Several inferences might be drawn from the evidence regarding the reason why he was rejected by the union: That he was examined by its examining board and found to lack skill, or that he had not previously served an apprenticeship of five years as helper, or that the order only received applications for membership one month out of the year, and he applied at the wrong time, or that an increase of the number of steam fitters in the city of St. Louis was deemed undesirable. Whatever the cause, his subsequent treatment by the union was harsh and oppressive.

3. While we think there was evidence to justify the court in instrucing the jury that they might give plaintiff damages for mental suffering for the willful and malicious acts of defendants, we think a retrial was rightly granted because the instruction on the measure of damages did not leave it to the jury to find the quality of defendants' acts. Some of the testimony tended to vindicate at least a portion of them from the charge of willful and malicious conduct, if not from any connection with plaintiff's grievances.

The judgment is affirmed and the cause remanded. All concur.

Labor Organizations—Boycotts—Use of Mails to Defraud—*United States v. Raish et al., United States District Court, Southern District of Illinois, 163 Federal Reporter, page 911.*—The Wahlfield Manufacturing Company proposed to enlarge its planing mill, and, in order to keep its employees together, to employ them in the construction of the new work. Some of the men were members of a local carpenters' union, others of a wood cutters' union, while others were members of no union. Pending the work, an officer of the carpenters' union requested the company to compel all its men to join that union. On its refusal to do so, this officer handed Mr. Wahlfield a letter stating that a fine of $500 had been imposed on the company which would be remitted if only members of the carpenters' union were employed on the job; otherwise he must pay the fine or suffer a boycott. Letters were afterwards sent to the company's customers urging them not to handle its products, and Mr. Wahlfield had the president and secretary of the union indicted for an attempt to defraud by use of the post-office.

After the evidence was in, Judge Humphrey instructed the jury as follows:

The case you are considering is an indictment in three counts drawn under section 5480 of the federal statutes (U. S. Comp. St. 1901, p. 3696) charging these two defendants, Humphrey and Raish, with having devised and executed a scheme to defraud by use of the Post-Office Department of the United States.

The indictment is in three counts. The first count alleges that the scheme, as devised by these defendants, was that they, taking advantage of their position as officers of a certain labor organization, would cause an assessment of a fine to be placed against the Wahlfield Manufacturing Company, and induce that company to pay said fine under a threat of a boycott if the company did not pay, and that the scheme contemplated the use of the mail, and that certain letters in execution of the scheme did pass through the mail. The second and third counts are based upon a different theory; that the scheme devised was these defendants, taking advantage of their position as members and officers of the said labor organization, would by use of the mails cause a boycott to be put in force against the business of the Wahlfield Manufacturing Company, and thus injure that company in its business. The first count is drawn upon the theory that their intention in the scheme was to induce Wahlfield to pay in order to escape the boycott, which would have been in fraud of the Wahlfield Manufacturing Company. The other two counts are drawn upon the theory that their device contemplated that he would not pay, but would suffer the boycott, and thus be defrauded in his business.

Either of these counts constitutes an offense under the statute. The indictment is no evidence of guilt. It is simply a formal method taken by the prosecuting department of the Government to present to the defendants in legal form the charge made against them. If you believe from the evidence beyond a reasonable doubt that the defendants did devise the scheme in question, did cause this fine to be assessed against the Wahlfield Company, and did cause the boycott to be undertaken against the same company and did use the mails in execution of that device, all as charged in the indictment, or in any count thereof, then you will find the defendants guilty. On the other hand, if you do not believe from the evidence beyond a reasonable doubt that the defendants devised the scheme in question to cause the fine to be assessed and the boycott to be put in force, and used the mail in execution thereof, as charged in the indictment, or in any count thereof, then you will find the defendants not guilty.

The burden is upon the Government. The Government must prove all the material allegations of the charge by evidence which convinces your minds beyond a reasonable doubt. I mean by that that the defendants do not have to prove their own innocence. The Government must prove their guilt. The presumption of innocence is with the defendants. You must allow that presumption to remain with them until it has been removed by the proof in the case convincing your minds of their guilt beyond a reasonable doubt. In order to constitute this offense, it is not necessary that any profit or gain should have come to either of the defendants. In order to constitute this offense, it is not necessary that the scheme should have been successful under either one of these counts.

The law further is, gentlemen, that if the scheme in question was devised by the union, as testified to by some of the witnesses, that, so far as any action was taken at all, it was all taken by the union and under the order and instructions of the union, still, if you further believe from the evidence beyond a reasonable doubt that the defendants or either of them participated in such action of the union or assisted in carrying out such action of the union, and acquiesced in such action of the union, then as to said defendants you will find them guilty just the same as though the action had been individual on their part. Evidence has been introduced tending to prove the good reputation of these two men. Reputation is the most valuable heritage any man can have. You are to consider that in making up your judgments. You are to consider all that the evidence shows as to previous good reputation in making up your judgments as to the guilt or innocence of these defendants. You are the judges of the facts. You find the facts for yourselves. You find them from the evidence, not from any outside inferences or impressions. You take the law from the court, and you are to give to the law, as the court gives you the law, the same force which you give to the facts as you find the facts to be. You have heard the witnesses; seen them upon the stand; listened to their testimony. You have a right to consider what you have seen, and what you have heard as coming from these various witnesses; their manner and appearance upon the stand; their frankness and honesty; their interest in the case, if any has been shown; their prejudices, if they have shown any prejudice; their knowledge of the facts; their opportunity to have a knowledge of the facts about which they have testified; the reasonableness or unreasonableness of the stories they have told upon the stand in answer to questions; and from all these various considerations you make up your judgments for yourselves as to the weight to be given to the testimony of any witness.

You have nothing to do with the punishment. Congress has placed that burden upon the court. The form of your verdict will be, if you find the defendants guilty: "We, the jury, find the defendants guilty." If you find them not guilty, the form of your verdict will be: "We, the jury, find the defendants not guilty." And, if you find one guilty and one not guilty, the form of your verdict will be: "We, the jury find the defendant ——— guilty, and the defendant ——— not guilty"—filling the blanks with the names as you shall find.

The court then asked if there were exceptions to these instructions. Some were made by the counsel for the defense, but the court refused to modify its statements, and the jury found the defendants guilty.

DECISIONS UNDER COMMON LAW.

CONTRACT OF EMPLOYMENT—ENFORCEMENT—RESTRAINT OF TRADE—DISCLOSURE OF SECRET PROCESSES—*Taylor Iron and Steel Company v. Nichols et al., Court of Errors and Appeals of New Jersey, 69 Atlantic Reporter, 186.*—The court of chancery had granted the complainant company a decree enjoining Wesley G. Nichols from divulging to anyone besides the complaining party any information known to him at the time of the making of a contract of service, or information acquired during the term of the contract, relating to the making of steel in the company's works; also from divulging treatments, processes, and secrets known to or used by him in the company's works, and from devoting during the term of said contract any part of his time, skill, labor, and attention to the service of anyone except the complainant company. The company operated under certain processes and patents for which it had procured licenses from time to time from the owner, under conditions that imposed secrecy. Nichols was an employee of about ten years' standing when a new contract of employment was entered into with him to run five years, one paragraph of which reads as follows:

(2) The said Wesley G. Nichols agrees that he will devote his entire time, skill, labor, and attention during the term of this agreement to the service of the Taylor Iron & Steel Company, and that he

will at all times faithfully perform the duties that may be assigned to him by the management of the said Taylor Iron & Steel Company to the best of his skill and ability for the compensation aforesaid, and that he will not at any time directly or indirectly, during the term of this agreement or afterwards, divulge to any person, firm, or corporation, except to the Taylor Iron & Steel Company and its officers, any information of any nature now known to him, or hereafter acquired by him during the term of this agreement, relating to or regarding any process of steel making or moulding or treating steel that may have been, is now, or may be hereafter during the term of this agreement, used in the works of the Taylor Iron & Steel Company, and that he will at all times hold inviolate the treatments, processes and secrets known to or used by him in the works of the said Taylor Iron & Steel Company.

As stated above the court of chancery granted an injunction to enforce this agreement. The court of errors and appeals, however, reversed this decree for reasons set forth in the opinion reproduced herewith, which was delivered by Judge Swayze:

The validity of this agreement is assailed by the defendant on several grounds. We think it is necessary to consider only the objection that it is invalid because it constitutes an excessive restraint of trade.

The rule of this State is that a contract in restraint of trade will not be enforced unless the restraint is no more extensive than is reasonably required to protect the interests of the party in favor of whom it is given, and not so large as to interfere with the interests of the public. Mandeville *v.* Harman, 42 N. J. Eq. 185, 7 Atl. 37, Sternberg *v.* O'Brien, 48 N. J. Eq. 370, 22 Atl. 348, both of which were cited with approval by this court in Trenton Potteries Co. *v.* Oliphant, 58 N. J. Eq. 507, 43 Atl. 723, 46 L. R. A. 255, 78 Am. St. Rep. 612.

Where the contract relates to personal services of a special, unique, or extraordinary character which can be performed by no one else and there is a negative covenant, the court sometimes enforces the negative covenant by injunction, as in Lumley *v.* Wagner, 1 De G. M. & G. 604. But the jurisdiction of equity rests upon the inadequacy of the legal remedy. Pomeroy, ¶ 1344, and the courts of other jurisdictions, as well as our own courts in the cases cited, have shown a reluctance to extend the jurisdiction. (Whitwood Chemical Co. *v.* Hardman (1891) 2 Ch. 416, 60 L. J. Ch. 428; Rice *v.* D'Arville, 162 Mass. 559, 39 N. E. 180.) The present case does not show that Nichols' services were of so special, unique, or extraordinary character that an injunction should issue.

The contract not only forbids Nichols to disclose any secret of the complainant, but also any knowledge he might have relating to the process of making steel that may have been used in the complainant's works, whether matter of common knowledge or not, whether known to him before he entered their employment or not; and it also requires him to hold inviolate not only the secrets of the complainant, but his own secrets, if he had any, and treatments or processes, whether secret or not. The necessary result of the enforcement of the contract would be that Nichols must either work for the complainant or remain idle; and, since the restraint is unlimited in point of time or place, he might at the option of the complainant after the expiration of five years be without employment for the rest of his life at the only trade he knows. Such a restraint savors of servitude, unrelieved by an obligation of support on the part of the master. The courts have refused to enforce similar contracts. (Alger *v.* Thacher, 19 Pic. (Mass.) 51, 31 Am. Dec. 119; Albright *v.* Teas, 37 N. J. Eq. 171.)

The learned vice chancellor perceived the difficulty we have mentioned, but held that the agreement was limited to processes in use by the complainant which were not known to Nichols until they were disclosed to him by the complainant. If we were able to adopt this restricted meaning, we should still think the covenant an unreasonable restraint. Some of the secret processes were those known as the Hadfield processes which had been communicated to the defendant under the contract of 1896. That contract bound him to secrecy only until January 1, 1902. By necessary inference, after that time he was no longer bound. "Expressio unius exclusio alterius." On the vice chancellor's construction of the agreement of 1905, he bound himself forever not to disclose secrets learned under the contract of 1896. There is nothing to show that circumstances had so changed as to require a perpetual restraint in 1905, when a restraint for six years only had been adequate in 1896, or that reasonable protection of the complainant required a perpetual restraint of the defendant from disclosing what by agreement he had been entitled to disclose for the three years preceding. The complainants themselves are restrained only until July 1, 1908. In our judgment the complainant's case fails as far as it rests upon the written contract.

The complainant's right does not rest on the contract alone. We have held that a contract for secrecy may be implied from a confidential relation between employee and employer, and the divulging of a secret be enjoined. (Stone *v.* Grasselli Chemical Co., 65 N. J. Eq. 756, 55 Atl. 736 [see Bulletin No. 50, p. 208].) The circumstances of this case require such a contract to be implied as to all secrets not covered by the special contract of 1896. As to those secrets, that written contract controls. Our difficulty in this respect arises out of the manner in which the case was tried. The bill avers, and the answer denies, that the complainant has secret processes. This was the very issue to be determined. The vice chancellor, however, refused to admit evidence as to the details of the alleged secret processes or cross-examination with reference thereto. The decree awards an injunction restraining Nichols from divulging the secret methods and processes used by the complainant in making manganese steel taught to or acquired by him while in their employment.

The difficulty which arises in this class of cases is that of affording adequate protection to a secret, if any disclosure of it is required. The court in a proper case where the details of the secret are known to all the parties, and no doubt arises as to its secret character, may well refuse to compel a disclosure. Such a case was Eastman *v.* Reichenbach (Sup.) 20 N. Y. Supp. 110. But in the ordinary case a disclosure to the court is necessary, and that for two reasons: (1) That the court may determine the issue of fact; and (2) that the terms of the injunction may be so specific that the question of a violation may be determined. In the present case the evidence is convincing that the complainant made a product of peculiar excellence, which had obtained high repute in the market, and quite persuasive that it has special methods of manufacture; but it is impossible to tell from the evidence whether the results achieved were due to skill in manipulation acquired by experience, or to some secret process, or whether, if there was a secret process, it was more than the Hadfield process which the defendant Nichols had agreed not to disclose before January, 1902, or different from the process described in the Brinton patent which was taken out after the bill was filed and before the decree. Mr. Brinton himself testified that the process was essentially the Hadfield process, with such modifications as the complainant had made. A careful reading of the testimony has not enabled us to determine exactly what the complainant claims as a secret process.

The terms of the injunction are very broad. It restrains the defendant from divulging secret methods and processes, as if there was more than one, as, indeed, there may be, and it contains nothing by which it can be hereafter determined what are the methods and what are the processes, or whether the two are to be distinguished. The difficulty was thus expressed by Lord Eldon in an early case: "The only way by which a specific performance could be effected would be by a perpetual injunction, but this would be of no avail, unless a disclosure were made to enable the court to ascertain whether it was or was not infringed; for, if a party comes here to complain of a breach of injunction, it is incumbent on him first to show that the injunction has been violated." (Newberry *v.* James, 2 Merivale, 446, 451.)

The decree must be reversed to the extent that it enjoins Nichols from divulging or disclosing, directly or indirectly, to any person, firm, or corporation the secret methods and processes used by the complainant, and enjoins the American Brake Shoe & Foundry Company from disclosing or making use of any information relating to the secret methods and processes communicated to it by Nichols.

This determination does not dispose of the case. By the contract Nichols also agreed that he would devote his entire time, skill, labor, and attention during the term of his agreement to the service of the Taylor Iron & Steel Company, and to faithfully perform the duties that might be assigned to him. This portion of the agreement is severable from the agreement not to divulge secrets, and is in itself valid. We see no objection to an agreement to serve an employer to the exclusion of all others for a term of five years. A similar agreement has been sustained in the English courts. William Robinson & Co., Limited, *v.* Heuer (1898) 2 Ch. 451. Assuming that, if this portion of the agreement stood alone, we could, upon proper pleadings, sustain that portion of the decree which restrains the American Brake Shoe & Foundry Company from employing Nichols during the term of the agreement, such an injunction would necessarily rest upon the fact that both the obligation and opportunity of service under the agreement were still subsisting. The agreement itself, however, provides that it shall be terminated "by the failure of the said Wesley to faithfully observe and keep the terms and conditions by him to be kept and performed." The complainant, indeed, charges that Nichols' resignation was not accepted, but its whole case rests upon the theory that he had failed to faithfully observe and keep the terms of the agreement. The further provision that no termination of the agreement shall deprive the complainant of any remedy it might have had during the continuation of the agreement or at any other time for violation of its terms is not sufficient to entitle the complainant to this injunction; for such a decree is in effect a decree for specific performance, and the complainant can hardly claim specific performance of a contract by virtue of a clause giving a remedy for breach of its terms, even if we assume that the court of chancery will ever enforce by injunction a contract for ordinary personal services. As is said in the brief for the defendant: "The complainant has the choice to claim damages for breach or to claim performance under the terms of the contract, in which case he must offer to perform on his part. The complainant in the bill does not offer to continue to employ Nichols, and the decree does not impose on the complainant any terms that such employment shall be offered."

The decree must therefore be reversed, but because of the rejection of evidence, the reversal should be without prejudice to further proceedings in the court of chancery, or to the filing of a new bill if the complainant prefers that course.

EMPLOYERS' LIABILITY—COURSE OF EMPLOYMENT—EATING LUNCH ON PREMISES—*Riley v. Cudahy Packing Company, Supreme Court of Nebraska, 117 Northwestern Reporter, page 765.*—This was an action by John Riley to recover damages for injuries received by him while working for the company named, in its fertilizer department. Judgment was in Riley's favor in the district court of Douglas County, and the company appealed, the appeal resulting in the judgment of the lower court being affirmed. The accident causing the injury occurred at lunch time, and the case is noted here merely to reproduce the ruling of the court on the question raised by the company as to course of employment. It was customary for the men to bring their lunches and eat them in the factory. Lockers were provided for their safe keeping, but no particular place for eating was designated. In going with others from the place where he had eaten, Riley, who was last, was injured by a large steel plate falling upon him. Questions of the employers' duty and of proof of negligence were disposed of, when the court said:

The defendant further contends that the relation of master and servant did not exist at the time of the accident, and therefore the rule requiring the master to furnish reasonably safe place and appliances for his servant had no application. In this view we can not concur. It appears that the defendant was desirous of having its plant operated with the smallest loss of time possible for lunch, and that it allowed but 30 minutes for lunch. It also knew that, because of the offensive odors, the workmen could not be expected to go to their homes or outside of the building to take their noonday meals without changing their clothing. It was not practicable for the workmen within the time allowed to change their clothing and go elsewhere for their meals. The defendant provided lockers, safe receptacles in which the workmen placed their clothing and lunch pails. We think it was fairly contemplated by their employment that the workmen should remain in the building and eat their lunches there. No particular place was provided wherein they should eat their lunches, but the defendant knew by long custom that the workmen ate their lunches in this particular place. It knew or should have known of the dangerous condition of the steel plate, and that it was liable to fall upon and injure them. We do not think it can be said that the workmen were mere licensees, as contended for by the defendant, but they were there as a matter of right and by the invitation of the master. It was necessary that the workmen should eat in order that they should have strength to labor, and we think that the workmen were entitled to the same protection and the same care of the master during the time they were taking their lunches upon the premises as they were while they were actually at their labor.

EMPLOYERS' LIABILITY—COURSE OF EMPLOYMENT—LEAVING PLACE OF WORK FOR PERSONAL ENDS—*Wilson v. Chesapeake and Ohio Railway Company, Court of Appeals of Kentucky, 113 Southwestern Reporter, page 101.*—M. B. Wilson was an employee of the company named, his duties requiring his continuous presence at its roundhouse in the town of Russell from 6 p. m. till 6 a. m. At about 3 a. m. he left his place of work to go to a restaurant for food, and while crossing the intervening tracks he was scalded by stepping into a pool of hot water formed by the leakage of pipes used to heat the cars. Wilson's suit for damages in the circuit court of Greenup County resulted adversely, whereupon he appealed. The court of appeals affirmed the judgment, as appears from the following extracts from the opinion of Judge Barker, who spoke for the court:

Upon the night in question a Pullman car was standing upon the track, and from four to six feet away an engine was standing. Appellant attempted to go through the passageway between them, and while so doing stepped into the pool, and was injured as above set forth. The evidence for the appellant showed that the employees of the corporation were permitted, and did frequently go to the restaurant in question and get meals during the night. It will be observed that, while the relation of master and servant still existed between the corporation and the plaintiff, yet he was not in the active discharge of any duty he owed to the corporation when he left the roundhouse and went to the restaurant. He was going because he was hungry and desired a meal. The master was therefore at the time under no duty to watch over and guard him against any danger he might encounter on his way to and from the restaurant.

Judge Barker then cited a number of cases at some length, and concluded:

The principle involved in the case at bar can not be distinguished from that settled in the cases above cited. The plaintiff, when he left his place of duty and undertook to walk across the yard of the railroad company for his own purposes, assumed all of the hazard of the undertaking, and can not complain that the yard was not kept free from danger for his benefit. As said in the Pendleton case [104 S. W. 382, 31 Ky. Law. Rep. 1025], the master owed him no duty to anticipate his deviation from his duty and the possible danger which might arise to him therefrom, and to provide against it. He took things as he found them, and suffers all consequences of his own error, and can not make his master liable therefor.

EMPLOYERS' LIABILITY—RAILROAD COMPANIES—NEGLIGENCE—CONTRIBUTORY NEGLIGENCE—PROXIMATE CAUSE—*Dortch v. Atlantic Coast Line Railroad Company, Supreme Court of North Carolina, 62 Southeastern Reporter, page 616.*—G. L. Wiggins was conductor on a freight train of the defendant company, and was killed by jumping from a moving car. His administrator, Dortch, sued for damages, and secured a verdict in the superior court of Wayne County, from which the company appealed. The judgment of the court below was affirmed, Wiggins' negligence in jumping from the car being held by the supreme court not to be the proximate cause of his death. The facts appear in the opinion, which was delivered by Judge Brown, and which is in part as follows:

The evidence in this case was all offered by plaintiff, and tended to show that plaintiff's intestate was conductor in charge of the switching train of the defendant at Rocky Mount on the 7th day of March, 1907. The stone car was shifted onto the spur track, and left there a short time while the other cars in the train were placed on the upper track. Then the engine came back to couple to the car of stone. When the conductor left the car of stone he failed to tie the brakes. His attention was called to this before he attempted to couple, and he was told, in the event he missed coupling the car, it would go into the river. Notwithstanding this, he attempted to make the coupling without fastening the brakes, saying that he could make the coupling. He scotched the car car with wood, and signaled the engineer to move back cautiously. The engineer did move cautiously, but the car, being on a curve, failed to couple, and the car jumped the wood scotch and moved a few feet. The conductor was again told to apply the brakes. He got some wood and scotched the train, but did not apply the brakes, saying that he would make the coupling that time. The second attempt failed, and the car jumped all the scotches, and by that time, to use the language of the witness, "had such momentum that no brake could have stopped it." The conductor and one of his brakemen jumped on the moving car to apply the brakes. Following the language of the plaintiff's witness, "he did apply them, but the application did no good. I was watching him and the car at the time. Shortly after getting on the car, I saw a man, and he must have lost his head, and swung out on each [the] side next to the mill. Instantly the car jumped the track, and I heard Mr. Wiggins groan. I ran to his assistance and found him dead. He was between the car and the mill wall." The evidence tends to prove that the car was derailed some four or five car lengths from where it started, because one of the rails had been moved out of alignment, and had been in that condition some 8 or 10 months. The rails lacked four inches of meeting at the point where the car jumped the track, and where the intestate was killed. The spur track generally was in very bad condition. There is also evidence tending to prove that, "if the car had not jumped the track, the plaintiff's intestate would have been safe on top the car." At the conclusion of the evidence the defendant moved to nonsuit. The court overruled the motion. Defendant excepted.

That the defendant is guilty of inexcusable negligence in allowing its track, although a spur track, to get into such dangerous condition is not a debatable question. All the evidence shows that this track was in a desperately bad condition, and that the derailment of the car, which was the occasion of the intestate's death, was due to its defective state. At the very point at which the rails were four inches out of alignment the car left the track, under such headway that brakes could not stop it. We are not confined here to a prima facie case of negligence, evidenced by the fact of a derailment, but we have complete proof of a condition of track amounting almost to gross negligence, which caused a derailment resulting in death. We have also evidence tending to prove that the intestate himself was guilty of negligence, first, in not fastening the brakes before undertaking to couple up the car; and, secondly, in jumping on the rapidly moving car with a view to stop its headway. The question is, What negligence was the proximate cause of his death? It is true that, had the intestate not jumped on the car he would not have been killed, and there is a probability that had he tied the brakes the car would not have gotten from his control. The former, while reckless, was in the master's service and for its benefit, for he was endeavoring to save the car and its load from the river. The latter, while the part of wisdom, did not cause the derailment, no more than the other. The plaintiff's intestate may have committed both acts of negligence, and yet have lived uninjured, had the track been in reasonably good condition. There is no such intermingling and cooperation of these alleged negligent acts of the intestate with the negligence of the defendant as to indicate that the intestate's negligence concurred with that of the defendant and helped to produce the derailment. (7 Am. & Eng. Enc. 374.) Of course, had the car not been derailed, and had it gone overboard, and had the intestate been drowned, the negligence of the defendant in maintaining so dangerous a track would not have been the cause of his death, but rather the intestate's own careless conduct. But it is incontestable that the defective track caused the derailment, and not the act of the intestate. We have no difficulty in concluding, therefore, that the negligence of the defendant was, in any view of the evidence, the proximate cause of the derailment.

The next mooted question is was the intestate, at the time of the derailment, guilty of contributory negligence in jumping from the car? Ordinarily, of course, jumping on or off a moving car is such contributory negligence as bars recovery, and it is so held generally in the courts of this country. Hutchinson on Carriers, sec. 1177, citing many cases. (Brown *v.* R. R., 108 N. C. 34, 12 S. E. 958; Burgin *v.* R. R., 115 N. C. 673, 20 S. E. 473.) But the principle does not apply here. Although the intestate risked life and limb in jumping aboard the car, he did it in the endeavor to save it from destruction. There is no evidence that he then knew of the gap in the track which caused the derailment. As to that, he had a right to believe that he was comparatively safe. When he felt the rapidly moving car was leaving the track, he suddenly learned that he was in a position of great danger. As the sequel proved, it would have been safer not to jump, but under such conditions the law does not exact infallible judgment, but only reasonable care and prudence. (Hinshaw *v.* R. R., 118 N. C. 1047, 24 S. E. 426.) The able and careful judge who tried this case properly left that to the jury, when he instructed them: "If you find the derailment was caused by the bad condition of the track, but you also find that the plaintiff's death was caused by his act in attempting to get off the car while it was passing between the buildings, and that his conduct in this respect was negligent—that is, that he did not exercise the care that a man of ordinary prudence would have exercised under similar circumstances—then such conduct on his part would be the proximate cause of his death, and you should answer the second issue, 'Yes.'"

Upon a careful review of the entire record, we are unable to find any error of which the defendant has just cause to complain.

EMPLOYERS' LIABILITY—RES IPSA LOQUITUR—APPLICATION OF DOCTRINE—*La Bee v. Sultan Logging Company, Supreme Court of Washington, 97 Pacific Reporter, page 1104.*—This case was one to recover damages for injury to an employee, and from a judgment in plaintiff's favor the company appealed to the supreme court. Judgment was affirmed (47 Wash. 57, 91 Pac. 560) and a petition for rehearing denied. The opinion on the question of rehearing discusses the application to employers' liability cases of the doctrine of res ipsa loquitur, which may be expressed, "the event speaks for itself." The effect of the doctrine is to relieve a plaintiff of the duty of proving negligence in cases where the accident itself is of such a nature as to necessarily involve negligence. It is rarely applied to employers' liability cases, but is formally adopted by the court in this case, as appears from the following opinion, which was delivered by Judge Fullerton, without dissent:

This case is before us on rehearing. For the former opinion see La Bee *v.* Sultan Logging Company, 47 Wash. 57, 91 Pac. 560, where will be found a statement of the issues involved. In the petition for rehearing, as well as in the oral argument made at bar, it is insisted that the court erred in applying the doctrine of res ipsa loquitur to a case between master and servant. It is contended that this doctrine is applicable only "to cases between carrier and passenger, and other cases wherein the person sought to be held occupies the relation of insurer," but is never applied to a case where the servant sues the master for negligence causing personal injuries. The weight of authority seems to support counsel's contention in so far as they contend that the doctrine is not applicable to cases between master and servant. The federal cases uniformly so hold, and in the majority of the States the same rule obtains. See Northern Pacific Railway Company *v.* Dixon, 139 Fed. 737, 71 C. C. A. 555, and the cases there collected. But, the question being a new one in this State, we have felt ourselves at liberty to inquire into the reason for the rule, and to discard it if we found the reasons given to maintain it unsatisfactory. These reasons are perhaps as well stated in the case cited as in any other. It is there said that the doctrine is inapplicable to cases between master and servant brought to recover damages for negligence, "because there are many possible causes of accidents during service, the risk of some of which, such as the negligence and other ordinary dangers of the work, the servant assumes, while for the risk of others, such as the lack of ordinary care to construct or keep in repair the machinery or place or [of] work, the master is responsible. The mere happening of an accident which injures a servant fails to indicate whether it resulted from one cause the risk of which is the servant's, or for one of those the risk of which is the master's; and for this reason it raises no presumption that it was caused by the negligence of the latter." In other words, the reason is that, because in some instances it is difficult to determine from the facts shown whether the blame is the master's or the servant's, the master shall have the benefit of the presumption in all cases and the servant in none. It has seemed to us that this reasoning is not only unsound, but is grossly unfair to the servant. Where the facts of the case are such as to eliminate blame on the part of the servant or his fellow-servants, but show prima facie neglect on the part of some one, we think the master should be put to his proofs to show that the blame is not his, just the same as he would be were the injury to a stranger. Such a rule casts the burden upon the person who is in a position to know the facts, and who can make the proofs by direct and positive evidence, while the rule contended for by the appellant compels the resort to indirect and circumstantial evidence. In this case the servant made proofs to the effect that the master furnished him with an instrument with which to do his work and directed him to do it in a particular manner; that he took the instrument and proceeded to perform the work in the manner directed, when the instrument gave way and injured him, and we think it no hardship to cast on the master the burden of showing that the instrument was suitable for the purposes for which it was intended and that any defect therein was unknown to the master, and by reasonable diligence could not have been discovered by him.

This is not holding, as the appellant seems to argue, that a presumption of negligence arises from the mere fact of injury. The injury itself proves nothing. It may have been the fault of the servant. But, in a case where the servant eliminates any fault on his part by showing that the injury was caused by the giving way of an instrumentality furnished him with which to work while he was using it for the purposes intended and in the manner directed, he shows that the fault is in the instrumentality itself for which the master is prima facie responsible. The case differs from an ordinary case of injury only in the manner of proof. In each case, of course, a prima facie case of negligence against the master must be made out, but in the one it is made out by showing the injury, and eliminating negligence on the part of the servant and his fellow-servants, while in the other it is made out by direct evidence of negligence on the part of the master.

Counsel make another contention it may be well to notice. The paragraph we have quoted in our statement of the contentions made by counsel is from their petition for rehearing. In it, it will be observed, counsel assume that the doctrine of res ipsa loquitur is applied only in those cases where the person sought to be held occupies the relation of insurer to the person injured. The illustration given is that of carrier and passenger. But counsel must know that the assumption that a carrier is an insurer of the safety of its passengers is against the great weight of authority, even if it is now the rule in any jurisdiction. Certainly this court has never so held. On the contrary, in our own reports, and the reports generally, can be found cases where the carrier has successfully defended against its liability for injuries suffered by its passengers. If it was an insurer, its defense would have been confined to the amount of damages to be awarded. It would not have extended to the liability itself. Nor is the doctrine confined in other instances to the case where the person sought to be held is an insurer of the safety of the person injured. This court in the case of Anderson *v.* McCarthy Dry Goods Co. (Wash.) 95 Pac. 325, applied the doctrine to a case where a person was injured while in a dry goods store by the fall of a basket from an overhead carrier system; citing authority to show that the holding was sustained by the great weight of authority. Surely it will not be contended that the proprietor of a merchandise store is an insurer of the safety of every person who enters it. But these latter inquiries are not material to the question in hand. They are cited to show that the holding that denies to a servant, simply because he is a servant, the benefit of the rule of res ipsa loquitur in a proper case, is unreasonable and unjust, and is required by no rule of public policy.

EMPLOYMENT OF LABOR—TERM—EVIDENCE—BREACH BY EMPLOYER—DAMAGES—*Maynard v. Royal Worcester Corset Company, Supreme Judicial Court of Massachusetts, 85 Northeastern Reporter, page 877.*—Charles B. Maynard sued the company named for breach of contract, and recovered damages before a justice of the superior court of Worcester County. Exceptions to this judgment were taken by the company, but were overruled by the appellate court. The facts are set forth in the opinion, which was delivered by Judge Rugg, and which is, in the main, as follows:

This is an action of contract, by which the plaintiff seeks to recover from the defendant money claimed to be due on account of salary. There are two counts in his declaration, one alleging salary due, under a contract for one year, to December 1, 1907, and the other that due under a separate contract for the month of December. The case was heard before a justice of the superior court, who found for the plaintiff in a sum less than the salary. The defendant's exceptions bring before us all the evidence warranting a finding of a contract for a stipulated time between the plaintiff and defendant, and whether there was sufficient evidence to warrant a finding as to damages.

The evidence was somewhat conflicting, but, having regard only to its aspects most favorable to the plaintiff, as we must in passing upon the action of the superior court, would justify a finding that he had been in the employ of the defendant for several years, with the duty, among others, of figuring costs; he was also a director of the company, and always received his pay weekly; the financial year of the defendant began on the 1st day of December, and on December 9, 1904, its board of directors voted that the salaries of the president, treasurer, clerk, one Bennett, and the plaintiff "be increased 20 per cent on the amount of their salaries for the year 1904;" a short time thereafter a single payment for the amount so voted for the year then just ended was made to the plaintiff; under date of December 20, 1905, the defendant's board of directors passed a vote respecting the same persons, that their "salaries * * * be increased 20 per cent on the amount of their present salaries for the year 1905;" on December 12 or 14, 1906, the treasurer of the defendant said to the plaintiff, "Mr. Fanning requests me to say your salary for the coming year will be $5,000, and he also wished me to state that your last year's salary will be $5,000;" the salary for the year preceding had been $4,000, and $1,000 was immediately paid to the plaintiff, and the weekly payments thereafter made were on the basis of $5,000 per year; about the middle of September, 1907, Mr. Fanning, the president of the defendant, who was authorized to employ and discharge employees and fix their salaries, said to the plaintiff that, unless he changed certain conditions, his contract would terminate January 1st, to which the defendant replied, "If you wish, * * * I will accept and make my plans accordingly January 1st." In the latter part of September the plaintiff was discharged without adequate cause.

Whether there is a contract for services for a definite period of time in any case depends upon all the attendant conditions surrounding the agreement, as well as upon its terms when the latter are not specific and clear. Several features tend to support the contention that the plaintiff was employed for a year from the 1st of December, 1906. For three years at least there had been an annual readjustment of compensation, early in December. Where there has been a recognition of annual employment, the bare continuance of service after the expiration of the term without anything being said is of some importance in the inquiry, whether the contract of service is renewed by implication for the like period. (Dunton *v.* Derby Desk Co., 186 Mass. 35, 71 N. E. 91.) The word "salary" was used both in the vote of the board of directors for the years 1904 and 1905, and in the conversation between the treasurer of the defendant and the plaintiff, in describing the compensation which the plaintiff was to receive. This word is perhaps more frequently applied to annual employment than to any other, and its use may import a factor of permanency. (Henderson *v.* Koenig, 168 Mo. 356, 68 S. W. 72, 57 L. R. A. 659; People *v.* Myers (Sup.) 11 N. Y. Supp. 217. See sub nomine Burrill's Law Dictionary.) The unit of time used in describing the compensation was one year. In many jurisdictions this fact standing alone is regarded as sufficient evidence of the term of employment, and perhaps this is the implication of Nichols *v.* Coolahan, 10 Met.

449. Although some courts hold that a hiring at so much a year, where no time is specified, is indefinite and may be terminated at will (see Martin *v.* N. Y. Life Ins. Co., 148 N. Y. 117, 42 N. E. 416; Pinckney *v.* Talmage, 32 S. C. 364, 10 S. E. 1083 [etc.]), the weight of authority is that this circumstance alone, in the absence of any other consideration impairing its weight, will sustain a finding that there was a hiring for that period. (Chamberlain *v.* Detroit Stove Works, 103 Mich. 124, 61 N. W. 532; Beach *v.* Mullin, 34 N. J. Law 343 [etc.].)

Without reviewing the cases or analyzing the principles to determine which is the sounder view, it is enough to say that the use of the sum of money equivalent to a year's pay, in describing the amount which the plaintiff was to receive, was a proper circumstance for consideration in connection with other incidents. The length of the term of service reasonably inferable as the understanding of the parties, from their words, course of dealing and other acts, was a fact to be determined upon all the evidence. Grouping all these circumstances, and giving them the color most favorable to the plaintiff, as the trial court had a right to do, we can not say that his finding, that both the contracts alleged were made, was unjustified. (Tatterson *v.* Suffolk Mfg. Co., 106 Mass. 56; Davis *v.* Ames Mfg. Co., 177 Mass. 54, 58 N. E. 280.)

The refusal to grant the fourth prayer of the defendant, to the effect that the plaintiff was not entitled to recover on the second count of his declaration, was equivalent to a finding that he was so entitled. (See Jaquith *v.* Davenport, 191 Mass. 415, 418, 78 N. E. 93.) This determination also is not without supporting evidence. The testimony of the plaintiff, that Mr. Fanning said to him in September that unless certain conditions changed his contract would end January 1st, together with the plaintiff's reply that he would accept and make his plans accordingly for January 1st, which perhaps carried a little further and clinched the proposition of Mr. Fanning, would authorize the finding of a contract for service, which included December.

The plaintiff testified that he made no effort to secure employment, from the time he was dismissed from the service of the defendant, on September 21st, until January 1st following, and that he did not think he could have secured a position if he had tried during that time, and that in December he was making arrangements to go into business for himself. This was the only oral evidence, outside the amount of salary which he had received from the defendant, as to the damages sustained. It is strongly urged by the defendant that, on this state of the testimony, the plaintiff is entitled to recover only nominal damages. Where one is under contract for personal service, and is discharged, it becomes his duty to dispose of his time in a reasonable way, so as to obtain as large compensation as possible, and to use honest, earnest and intelligent efforts to this end. He can not voluntarily remain idle and expect to recover the compensation stipulated in the contract from the other party. (Olds *v.* Mapes-Reeves Construction Co., 177 Mass. 41, 58 N. E. 478; Ransom *v.* Boston, 192 Mass. 299, 307, 78 N. E. 481; Id., 196 Mass. 248, 81 N. E. 998.) The amount of damages is to be determined by the wages which he would have earned under the contract, less what he did in fact earn or in the exercise of proper diligence might have earned in another employment. (Cutter *v.* Gillette, 163 Mass. 95, 39 N. E. 1010.) It seems to be the generally accepted rule that the burden of proof is upon the defendant to show that the plaintiff either found, or, by the exercise of proper industry in the search, could have procured other employment of some kind reasonably adapted to his abilities, and that in absence of such proof the plaintiff is entitled to recover the salary fixed by the contract. (Milage *v.* Woodward, 186 N. Y. 252, 78 N. E. 873; Porter *v.* Burkett, 65 Tex. 383 [etc.].)

If this view be correct, the defendant has no ground for complaint, because he introduced no evidence. It is not necessary to decide in the present case whether this is the correct rule. It is enough to say that the contrary view, which prevails in Kentucky, Mississippi and perhaps elsewhere [cases cited], has not been distinctly adopted heretofore in this Commonwealth.

The finding of the court in the present case was for a less amount than the contract price, although there was the testimony of the plaintiff that he did not think he could have secured employment if he had tried. There was evidence tending to show that during a part of the time at least covered by the contract he was engaged in preliminary preparations for establishing a business on his own account. From these circumstances, as well as from the plaintiff's own manner in testifying and other inferences, which the trial court drew from the appearance of the witness, he might have been satisfied that prompt, reasonable and bona fide efforts to obtain other employment would have been successful, or that by the use of his time for his own advantage in his private business he would have gained such value as to reduce materially the amount, which he might otherwise recover from the defendant. (Alaska Fish & Lumber Co. *v.* Chase, 128 Fed. 886, 64 C. C. A. 1.) The court is not precluded from using his own knowledge of practical affairs or applying his judicial sense to the consideration of a matter of such common occurrence as securing employment. If opinion evidence had been introduced, the court would have used it or not as he found it credible and helpful. He might well have been guided quite as much by his judgment of the value of the plaintiff's services, based upon his appearance, the character of work he had done and was competent to do and the wages he had received. It is the same problem, which courts and juries often solve in passing upon the extent of personal injury, and in determining how long disability may continue, and how soon and at what compensation employment may be found. They are frequently compelled to act upon evidence as slender as that in the present case. That it is difficult to ascertain the damages or that they depend upon events which are contingent, uncertain or matter of opinion is no sound objection to the recovery. Therefore, on this branch of the case also the finding of the court is not wholly unsupported.

Exceptions overruled.

LABOR ORGANIZATIONS—PROCURING EXPULSION OF MEMBERS—CONSPIRACY—LIABILITY OF ONE PARTY ONLY—DAMAGES—*St. Louis Southwestern Railway Company v. Thompson, Supreme Court of Texas, 113 Southwestern Reporter, page 144.*—W. Z. Thompson had been expelled from the Grand International Brotherhood of Locomotive Engineers by the action, as he alleged, of the railway company above named together with certain individuals, members of the Brotherhood. Thompson sued to recover damages, making the company and these individuals parties defendant, and secured a verdict against the company alone, which judgment was affirmed by the court of civil appeals, 108 S. W. 453. [See Bulletin No. 78, pp. 608–617, where the facts are more fully set forth.] From this judgment the company again appealed to the supreme court of the State, which reversed the courts below on grounds that appear in the quoted portions of the opinion given herewith. The opinion was delivered by Judge Brown, who, after a preliminary statement, said:

The case was tried before a jury, which, after being out for some time, presented to the court the following question: "Hon. R. W. Simpson, district judge, Dear sir: A part of the jury is not clear as to whether they can find for the defendant separately, as well as collectively. Therefore we ask your advice on this point. Very respt., G. H. Aikins, foreman." And to this the court replied in writing as follows: "Gentlemen of the jury: In answer to foregoing question, you are charged as follows: If you should find for all the defendants, your verdict will be 'We the jury find for the defendants.' If you should find in favor of some defendants and against others, your verdict should state against which defendants you find, naming them, and in favor of which defendants you find, naming them. R. W. Simpson, judge presiding." The jury returned this verdict: "We, the jury, find for plaintiff in this case a verdict for twenty-five hundred dollars ($2,500.00), five hundred ($500.00) as actual damages, and two thousand ($2,000.00) as exemplary damages against the defendant the St. Louis Southwestern Railway Company and for the other defendants. G. H. Aikins, foreman." The railroad company moved in arrest of judgment, because, the jury having found by their verdict that the other defendants were not guilty of conspiracy, no judgment could be entered against the railroad company. The same proposition was presented by motion for a rehearing. Both motions were overruled, and, upon appeal to the court of civil appeals of the first district, that court affirmed the judgment of the trial court.

The railroad company did not and could not actually participate in the act of expelling the defendant in error from the order, and can only be held liable for the results of that action by reason of the fact that it had entered into a conspiracy with the individual defendants named to procure some action by the Brotherhood against Thompson. The jury distinctly found for the defendants other than the railroad company, and thereby acquitted all other defendants from having entered into a conspiracy with the railroad company. There is no room for construction of this verdict, for it is expressed in plain language that the railroad company is the only guilty party defendant to the suit. Under the allegations in this case, the railroad company could not have accomplished the injury which was done to Thompson by its own action, but necessarily must have acted through other guilty parties. It therefore follows that an acquittal of all other defendants acquitted the railroad company of the charge made against it. A conspiracy can not be formed by one person.

The gravamen of the action in this case is the injury done; that is, the wrongful expulsion of defendant in error from the order of the Brotherhood of Engineers. The railroad company could not have effected that act alone. It could only do it, as we have said before, by the action of its codefendants through a conspiracy entered into by and between the railroad company and the other defendants. The verdict of the jury in effect finds as to the other defendants that the expulsion was not wrongful or was not procured through the combination charged. Therefore the railroad company could not be guilty and all others innocent.

It is insisted with much earnestness by the attorneys of the defendants in error that the jury might have found all the parties guilty, and yet inflict the punishment upon one of them. Let us test the correctness of this proposition by writing the verdict so as to express the implied proposition of the defendants' counsel. Suppose the jury had said: "We, the jury, find for the plaintiff against the defendant railroad company, and also against the other defendants, but we assess the damages alone against the railroad company for $2,500." Would the gentlemen contend for such a verdict, or would any court sustain such a discrimination? If it would not sustain it as written out, it can not sustain it as necessarily implied in the argument of the attorneys for the defendants in error.

It is insisted that suit might have been brought against the railroad company alone in this case. Grant that to be true (we do not intend to intimate to the contrary), the result would be the same, for, in order to recover against the railroad company, the same allegations and proof would be necessary to recover against it as is required in this case; i. e., it would be necessary for the plaintiff to prove the conspiracy between the parties, the unlawful action of other defendants in agreeing to carry it out, both as to making the charge and as to the action of the division, and, if plaintiff should fail to make such proof, he could not recover against the railroad company. If that company had been sued alone and the case submitted on special issues, and the jury had answered that the other defendants did not enter into the conspiracy, or that the expulsion was lawful, no judgment could be entered against the railroad company, although the jury should find against it. We conclude, therefore, that the court erred in giving the charge in answer to the request of the jury, and also erred in overruling the motion in arrest of judgment and the motion for a new trial, for which errors this case must be reversed.

The trial court erred in submitting the issues in this case to the jury by using the following language: "Then, if you further find from the testimony that the writing of the Penniman letter [encouraging a suit for damages against the railway company] could not reasonably be considered a violation of plaintiff's obligation to the laws of the Brotherhood," etc. The court should have decided that question. If the members of the Brotherhood who tried Thompson, acting in good faith and in fairness towards Thompson, believed and held that the writing of the letter to Mrs. Penniman and the circumstances attending it did or did not constitute a violation of the constitution and laws of the order, that finding would be conclusive of the question. Whether or not the members of the order acted fairly and in good faith towards Thompson in placing this construction upon the letter and the circumstances attending it was a question of fact for the jury, and was so submitted to them. If the members of division No. 201 of the Brotherhood of Locomotive Engineers in good faith fairly and honestly passed upon the testimony submitted to them, and found Thompson guilty of violating his obligation, or the constitution and laws of the order, then their action would be final and conclusive of the matter, and the plaintiff could not recover in this case because of his expulsion from that order, nor for any of the consequences flowing from it, although they may have found him guilty on the second charge also. If, however, the members of that order did not act in good faith, and did not exercise their honest judgment in coming to the conclusion that, by writing the Penniman letter, Thompson was guilty of a violation of his obligation, or the constitution and laws of the order, but used it as a pretext by which to expel him on account of the second charge made against him, then their action would be void, and Thompson would be entitled to recover.

The second charge, whereby Thompson was arraigned for having gone on the witness stand in the Bolton case and testified, did not furnish any ground for his expulsion from the order. If the Brotherhood of Locomotive Engineers had in their constitution or by-laws provided in so many words that a member who should testify in court in any case where he was called as a witness should be expelled, such provision would be a nullity, and would not be enforced in any court. If Thompson was wrongfully expelled through procurement of the Cotton Belt Railroad Company by a conspiracy and combination with other defendants named because he wrote the Penniman letter, or if he was expelled because he had done what was charged against him in the second specification alone, and not upon the first charge, then he would be entitled to recover against the railroad company, and against such of the other defendants as conspired and acted with it and against the order which expelled him for all damages which naturally flowed from such expulsion.

If the plaintiff shall be found entitled to recover against the defendants, his recovery should be for actual damages; that is, that sum of money which would compensate him for the pecuniary losses sustained by him as a result of his unlawful expulsion, and also such sum as would compensate him for the mental suffering and humiliation that was caused to him by reason of said expulsion and by reason of the publication of the same in the journal of the order. In this connection, we will say that the value of the insurance policy and traveling card alleged to have been forfeited by the expulsion would be the proper elements of actual damages to be assessed in his favor. If the defendants or either of them were actuated by malice in making the charges against Thompson, or in procuring the same to be made and in prosecuting the same before the order thereby procuring his expulsion, then the plaintiff may in the discretion of the jury recover exemplary damages against either or all of the said defendants in such sum as the jury may believe should be assessed against the said defendants or either of them. It is not necessary, as in case of actual damages recovered, that all of the defendants should be subjected to the same verdict because some of the defendants may have acted without malice, but in combination with others, and as to such defendants there would be no right to recover exemplary damages.

It is contended that the plaintiff could not maintain this action because he did not appeal from the decision of P. M. Arthur, Grand Chief Engineer, to the Grand International Division, but this is not a proceeding to restore him to his membership. It is a suit for damages occasioned by his expulsion, and one in which his property rights, as well as personal rights, are involved. We are of opinion that it was not necessary for him to have prosecuted his appeal further than he did before instituting his suit for damages. (Benson *v.* Screwmen's Ben. Ass'n, 2 Tex. Civ. App. 66, 21 S. W. 562; Bauer *v.* Sampson Lodge K. P., 102 Ind. 262, 1 N. E. 571.) On application for mandamus to restore plaintiff to membership, the court would not take jurisdiction until the applicant had exhausted his remedies under the laws of the Brotherhood. The same reason does not apply in a suit for damages. The right to apply to the courts for redress of such injuries as in this case exists in favor of all citizens, and could not be abridged by any association except by the consent of the member. The defendants have no ground upon which to stand in demanding that the remedy of appeal should be exhausted before they are called upon to repair the injury they have inflicted upon Thompson. The continuance of his membership in the Brotherhood does not concern the defendants.

The fact that Thompson testified as an expert when he was not or that he received pay for his testimony to which he was not entitled is irrelevant to any issue presented in this case. The charges upon which he was tried do not allege against him either the taking of improper fees or that he falsely represented himself as an expert. Therefore such evidence would not be admissible to support the finding and conclusion of the division No. 201 upon either one of the charges prosecuted before it.

It is therefore ordered that the judgments of the district court and court of civil appeals be reversed, and the cause remanded.

LABOR ORGANIZATIONS—STRIKES—LEGALITY—FINES ON MEMBERS—INTIMIDATION OF EMPLOYEES—EMPLOYERS' RIGHTS—INJUNCTION—*L. D. Willcutt and Sons Company v. Bricklayers' Benevolent and Protective Union No. 3 et al., Supreme Judicial Court of Massachusetts, 85 Northeastern Reporter, page 897.*—The complainant company was engaged in the construction of buildings in the city of Boston. The defendants were certain individuals named as officers and members of two unincorporated associations of workingmen and the other members of the associations as represented by the members named, thus bringing the whole membership properly before the court. (Pickett *v.* Walsh, 192 Mass. 572, 78 N. E. 753 [Bulletin No. 70, p. 747].) The company asked for an injunction to prevent the carrying out of a strike against them by the levying of fines on workmen who wished to continue in its employment after the strike had been declared. The facts were reported by a justice of the superior court of Suffolk County, and the supreme court, by a divided bench, granted the injunction prayed for. Two judges dissented in an opinion of some length, and a third joined in the majority opinion only on the ground that the point in question had been determined by the decision in Martell *v.* White, 185 Mass. 255, 69 N. E. 1075 [Bulletin No. 53, p. 958]. The majority opinion contained a statement of the facts. It was delivered by Judge Hammond, and, on account of its very considerable interest, is reproduced quite fully. It is as follows:

The questions before us grew out of a trade dispute between the plaintiff and the members of the unions who were in its employ. In April, 1906, these unions adopted a code of working rules, in which, besides some minor demands not now material, they demanded that wages be increased five cents an hour, that all foremen should be members of the unions, that the business agent of the unions should be allowed to visit any building under construction to attend to his official duties, and that wages should be paid during working hours. The plaintiff declined to accept these rules, and a strike followed.

By the constitution and rules of the unions it appeared that a code of fines and penalties was established by the International Union, an association composed of these and other similar unions throughout the country, and that this code was being actively enforced by the local unions. One rule provided that any member violating any section of the working code should be fined upon conviction not less than $5 nor more than $25, one of these sections being that "no member of the union shall work with a nonunion man who refuses to join the union." Various other penalties were provided, varying from $5 to $500 for each offense, to be imposed upon persons designated as "common scabs," "inveterate or notorious scabs," and "union wreckers;" these terms being applied to those who in different ways persist in working after a strike has been called. These fines in their operation are likely to be coercive in their nature.

This code was actively enforced by the unions, and most of the members of the unions who left their work did so through fear of the fines that would be imposed upon them if they continued to work. The defendants Driscoll and Reagan on one occasion found two men at work for the plaintiff, one a journeyman who had been and the other a foreman who was a member of the union. Reagan threatened the journeyman with a fine of $100 if he continued to work, and Driscoll notified the foreman that he was called out. Both refused to leave. Driscoll reported the fact at a meeting of the union and a vote was passed that charges be preferred against the men for working contrary to the rules. A preliminary injunction was issued in this case, and no further steps were taken under the vote.

The defendants established a strike headquarters, and provided a strike fund from which payments were made to the strikers and other men out of work. Some of the defendants made constant visits to a job of the plaintiff, generally at noontime, to persuade men whom the plaintiff had hired to leave its employ. They offered as inducements in some cases to nonunion men membership without the full payments usually required, and in other cases work elsewhere. Men frequently left the plaintiff's employ after these talks, in some cases stating that they would like to work but could not run the risk of being fined. The defendant Driscoll induced two men to go who otherwise would have continued at work, by paying them with funds of the unions the wages due them from the plaintiff and providing them with transportation to Utica, N. Y., where he had secured other work for them.

The plaintiff was constructing other buildings at Fairhaven and at Andover, which were within the districts of other unions; and the union men employed by the plaintiff on those jobs also struck. It was found however that these men were not under the control of the defendants, though it did fairly appear that these strikes were a direct result of the strike in Boston, since all these unions were affiliated together in the International Union and all members of the unions were familiar with what should be done in such cases.

It was admitted that the defendants were not persons of financial responsibility, and the court found "that the acts of the defendants as above set forth were calculated to interfere and did interfere with the performance of the complainant's contracts for the construction of buildings, and had they continued, would have seriously embarrassed the complainant in the prosecution of its business, and that such consequences were contemplated by the defendants in their endeavor to force the complainant to accept their working rules to govern the management of its business."

As already stated, the strike had four objects. Of these the demand for an increase of wages was properly enforceable by a strike. The demand that wages should be paid during working hours amounts merely to a demand for a shorter day, and also was properly enforceable by a strike. The reasonableness of such demands we have not the means of determining; and it is settled that such matters are best left to be adjudicated in the freedom of private contract between the interested parties. More difficult questions are presented by the demands that all foremen shall be members of the unions, and that the business agent of the unions shall be allowed to visit any building under construction. (See as to the first of these points a very interesting article by Professor Smith, 20 Harvard Law Review, 431, note 1.) But it is unnecessary under the circumstances to determine these questions, as the plaintiff replied with a bare refusal of all the demands.

We are of opinion therefore that this strike must be regarded as simply a strike for higher wages and a shorter day. It was not a mere sympathetic strike, as in Pickett *v.* Walsh, 192 Mass. 572, 587, 78 N. E. 753 [Bulletin No. 70, p. 747], or one whose immediate object was only remotely connected with the ultimate object of the strikers, as in Plant *v.* Woods, 176 Mass. 492, 57 N. E. 1011 [Bulletin No. 31, p. 1294]. It was a direct strike by the defendants against the other party to the dispute, instituted for the protection and furtherance of the interests of the defendants in matters in which both parties were directly interested and as to which each party had the right, within all lawful limits, to determine its own course. Such a strike must be treated as a justifiable strike so far as respects its ultimate object.

But however justifiable or even laudable may be the ultimate objects of a strike, unlawful means must not be employed in carrying it on; and it is contended by the plaintiff that the use of fines and threats of fines, under the circumstances disclosed in the record, are unlawful. The question is stated by the trial judge in the following language: "In case of a justifiable strike, has the contractor the right to invoke the aid of the court to prevent the labor union from imposing a fine [which the court has found to be coercive in its nature] or taking action to impose one upon one or more of its members under its rules to induce them to leave the contractor's employ to his injury?" Under the findings of the court it would seem that the question is not intended to be quite so broad as otherwise might be inferred from its language. The language is broad enough to include the case where the employee is under a contract to stay with his employer and where to leave would be a violation of that contract. But no such state of things appears upon the record. The plaintiff "hired its masons by the day and paid them on the basis of the number of hours worked, and it might have discharged them and they might have left at the close of any day." The question must therefore be considered as applying only to cases where the employee by leaving violates no contractual right of the employer.

The question how far the imposition of fines by an organization upon its members where the effect is to injure a third party is justifiable, was considered by this court in Martell *v.* White, 185 Mass. 255, 69 N. E. 1085 [Bulletin No. 53, p. 958], and it was there adjudged that the imposition of such a fine by which members of the organization were coerced into refusing to trade with the plaintiff, not a member, to his great damage, was inconsistent with the ground upon which the right to competition in trade is based, and as against him was not justifiable. In the course of the opinion the case of Boutwell *v.* Marr, 71 Vt. 1, 42 Atl. 607 [Bulletin No. 39, p. 501], was cited, in which the same conclusion was reached. In Martell *v.* White, five justices sat, and four of them, being a majority of the whole court, concurred in the ground upon which it was decided. The case was carefully presented by counsel, the questions involved were regarded as important, and there was a difference of opinion among the judges who sat in it. It was therefore considered at great length; and the conclusion was reached after a most exhaustive discussion and the most careful deliberation. It stands as a solemn adjudication by this court after such discussion and deliberation. So far as respects the trend of judicial opinion and authority there has been no change since the decision was announced unfavorable to it or to the ground upon which it was reached. On the contrary, so far as we are aware, whenever the case has been mentioned by members of the profession, whether they be judges engaged in the practical administration of the law, or professors teaching the students of our schools the true theory of its principles, it has been received with favorable comment. (See Brennan *v.* Hatters of North America, 73 N. J. Law 729, 65 Atl. 165 [Bulletin No. 70, p. 746]; Allis-Chalmers Co. *v.* Iron Moulders' Union, No. 125 (C. C.) 150 Fed. 155, 178 [Bulletin No. 70, p. 734]; 20 Harvard Law Review, 355, 356; 7 Green Bag, 210.) There is every reason why the doctrine of stare decisis should apply; and so far at least as respects this Commonwealth the case must be held as settling the correctness of the principle upon which the decision was based.

That principle, if applicable to the facts of this case, is decisive. The majority of the court are of the opinion that it is applicable, and hence that there should be a decree for the plaintiff enjoining intimidation or coercion by fines.

Before entering more fully upon the discussion it is well to get a clear conception of what the case is.

Shortly stated the case is this: The plaintiff's men are being coerced by threats of a fine to leave its employ, greatly to its injury, the fines to be levied in accordance with the by-laws of a voluntary association of which the proposed victims are members. This injury to the plaintiff is intended by the defendants. Has the plaintiff any standing in equity to an injunction against the infliction of such injury?

It is to be premised that the right which the plaintiff seeks to have protected against the acts of the defendants arises from no contract or statute, but out of the nature of things. It is one of the large body of rights which have their foundation in the fitting necessities of civilized society. It is the common law right to a reasonably free labor market. Vice Chancellor Stevenson, in speaking of it, says it has been called a "probable expectancy" and describes it as "the right which every man has to earn his living or pursue his trade without undue interference." Jersey City Printing Co. *v.* Cassidy, 63 N. J. Eq. 759, 53 Atl. 230 [Bulletin No. 45, p. 383].

This is the right—the right to a free labor market—which the plaintiff claims has been invaded by the defendants, and for which he seeks protection.

The defendants also have rights. They have the right to work or not to work, to sell their labor upon such terms as they see fit and to combine for the purpose of getting more pay or a shorter day. And for the purpose of strengthening their organization and making it more effective they have the right to make appropriate by-laws for its internal management, and for the regulation of the conduct of its members toward each other in matters affecting the general interests of the body; and they may enforce obedience to such by-laws and regulations by fines or other suitable penalties.

So long also as the by-laws of a union relate to matters in which no one is interested except the association and its members, and violate no right of a third party or no rule of public policy, they are valid. Fines may be imposed, for instance for tardiness, absence, failure to pay dues, or for misconduct affecting the organization or any of its members; and for numerous other acts. It can not be successfully contended, however, that as against the right of some party other than the association and its members an act, otherwise a violation of the third party's rights, is any less a violation because done by some member in obedience to a by-law.

There can be no doubt that fining is one method of injuring a man in his estate, and that a threat to fine is a threat of such an injury. Indeed this is recognized by the decree made by the trial court in this very case, so far as it affects Reagan, one of the defendants, who it was found had threatened with a fine a man once but not then a member of a union.

It is urged however that although this method of intimidation is generally an invasion of the employer's right to a free market and therefore illegal, yet when the intimidation is exerted by a union upon its members in accordance with its by-laws in a strike whose object is legal, it is justifiable and legal. To this the obvious reply is that the rule of freedom to contract is founded upon principles of public policy, that each party to a contract is interested in the freedom of the other party, that it can make no difference to the public or to the employer (who in this case is the other party) that the person intimidated is or is not a member of the society intimidating. In either case the injury is the same and is from the same cause, namely intimidation. The workman is no longer free. In Longshore Printing Co. *v.* Howell, 26 Or. 527, 38 Pac. 547, the court, after speaking of the general right of labor unions to make rules, proceeds thus: "It must be understood, however, that these associations, like other voluntary societies, must depend for their membership upon the free and untrammelled choice of each individual member. No resort can be had to compulsory methods of any kind to increase or keep up or maintain such membership. Nor is it permissible for associations of this kind to enforce the observance of their laws, rules and regulations through violence, threats or intimidation, or to employ any methods that would induce intimidation or deprive persons of perfect freedom of action."

The keynote on this matter is struck in Booth *v.* Burgess (N. J. Ch.) 65 Atl. 226, 233, in the following language: "No surrender of liberty or voluntary agreement to abide by by-laws on the part of the employees who are first coerced, made by them when they enter their labor unions, can * * * affect the right of the complainant to a free market, which right he will enjoy for all it may be worth if these employees are permitted to exercise their liberty. The employees may be able to surrender their own right, but they certainly can not surrender the rights of other parties."

In considering this question we can not lose sight of the great power of organization. It should be taken into account when one is considering where the line should be drawn between the right of the employer to a free market and the right of workmen to interfere with that market by coercion through the rules of a labor union. It is not universally true that what one man may do any number of men by concerted action may do. In Pickett *v.* Walsh, 192 Mass. 572, 78 N. E. 753, 6 L. R. A. (N. S.) 1067, 116 Am. St. Rep. 272, Loring, J., after alluding to the great increase of power by combinations, says: "The result of this greater power of coercion on the part of a combination of individuals is that what is lawful for an individual is not the test of what is lawful for a combination of individuals, or to state it in another way, there are things which it is lawful for an individual to do which it is not lawful for a combination of individuals to do."

This organization of labor to better the condition of the laborer is natural and proper. There can be no doubt that it is the most effective way, perhaps the only effective way in which as against the organization of capital the rights of the laborer can be adequately protected. In many ways the labor unions have succeeded in bettering the condition of the laborer; and so far as their ultimate intentions and the means used in accomplishing them are legal they are entitled to protection to the extreme limit of the law.

But their powers must not be so far extended as to encroach upon the rights of others. It is clear that if the power to intimidate by fine be regarded as one of the powers which labor unions may right-fully exercise, then the right to a free market for labor—nay, even the right of the laborer to be free—is seriously interfered with, to the injury both of the public and the employer as well as the laborer.

In view of these considerations and of others more fully set forth, in Martell *v.* White, which are not here repeated, and in Boutwell *v.* Marr, ubi supra, a majority of the court are of opinion that the overwhelming sense of the thing is that the principle that the right of the employer is not subject to coercion or intimidation by injury or threats of injury to the persons or property of laborers standing in the market to meet him, should apply to the coercion and intimidation exerted by labor unions upon their members by fines or threats of fines. Any other conclusion is inconsistent with the existence of a reasonably free labor market to which both the employer and the employee are entitled.

The result is that in the opinion of a majority of the court there should be a decree restraining and enjoining the defendants, their agents and servants from intimidating by the imposition of a fine, or by a threat of such fine, any person or persons from entering into the employ of the plaintiff or remaining therein, or from in any way being a party or privy to the imposition of any fine or threat of such imposition upon any person desiring to enter into or remain in the employ of the plaintiff; and it is so ordered.

LAWS OF VARIOUS STATES RELATING TO LABOR, ENACTED SINCE JANUARY 1, 1908.

[The Twenty-second Annual Report of this bureau contains all laws of the various States and Territories and of the United States relating to labor, in force January 1, 1908. Later enactments are reproduced in successive issues of the Bulletin, beginning with Bulletin No. 80, the issue of January, 1909. A cumulative index of these later enactments is to be found on page 195 of this issue.]

GEORGIA.

ACTS OF 1908.

Act No. 321.—*Railroads—Employment of locomotive engineers.*

(Page 49.)

Section 1. No railway company operating trains in this State shall have employed or allow in charge of one of its locomotives in this State, as a locomotive engineer, (except such engines used in yard service) any person who shall not have had as much as three years actual bona fide experience as a fireman or engineer on a railway locomotive, or who shall not have served an apprenticeship of four years in a regular railroad machine shop, and have had in addition thereto one year bona fide experience as a locomotive fireman.

Sec. 2. Any railway company violating this act shall be guilty of a misdemeanor and liable to indictment and punishment in any county in this State in which such inexperienced person shall be allowed to work upon such locomotive.

Approved July 23, 1908.

Act No. 537.—*Railroads—Headlights on locomotives.*

(Page 50.)

Section 1. All railroad companies are hereby required to equip and maintain each and every locomotive used by such company to run on its main line after dark with a good and sufficient headlight which shall consume not less than three hundred watts at the arc, and with a reflector not less than twenty-three inches in diameter, and to keep the same in good condition. The word main line as used herein means all portions of the railway line not used solely as yards, spurs and side tracks.

Sec. 2. Any railroad company violating this act in any respect shall be liable to indictment as for a misdemeanor in any county in which the locomotive not so equipped and maintained may run, and on conviction shall be punished by fine as prescribed in section 1039, of the Code of 1895.

Sec. 3. This act shall go into effect July 1, 1909.

Sec. 4. Provided this act shall not apply to tramroads, mill roads and roads engaged principally in lumber or logging transportation in connection with mills.

Approved August 17, 1908.

KENTUCKY.

ACTS OF 1908.

Chapter 59.—*Mine regulations—Inspectors.*

Section 1. The governor of this Commonwealth is hereby authorized and directed to appoint two additional assistant inspectors of mines, who shall hold the office for four years and until their successors are appointed and qualified. Said assistants shall have a thorough knowledge of the different systems of working and ventilating coal mines and of the nature and properties of mine gases, especially explosive gases and dust, and shall have a thorough and practical knowledge of mining gained by at least five years experience at and in coal mines. Said assistant inspectors, before entering upon the discharge of their official duties, shall be sworn to discharge those duties faithfully and impartially and to the best of their skill and ability, which oath shall be certified by the officer administering it, and said certificate shall be filed with the secretary of state in his office, and each of said assistants shall give bond in the sum of two thousand dollars, with surety to be approved by the governor, for the faithful discharge of his official duties. Each of said assistants shall give his entire time and attention to the duties of his office, which shall consist of aiding, under the direction of the chief inspector of mines, in carrying out and enforcing the provisions of the laws relating to the inspection of mines. He shall keep a record of all inspections made by him and shall make monthly reports of the same to the chief inspector and he shall at all times in all things pertaining to the duties of his office be subject to the orders of the chief inspector. No assistant inspector shall be interested in operating any mine in this State and each shall be liable to dismissal for willful neglect of duty, for misconduct, or malfeasance in office. Each assistant inspector shall receive an annual salary of twelve hundred dollars, payable monthly, and shall likewise be allowed and paid his necessary traveling and other expenses incurred on account of and when engaged in the discharge of his official duties.

But before any person or persons shall be appointed as such assistant mine inspector he shall be required to pass a satisfactory examination before the board of examiners hereinafter named and shall be required to obtain from such board of examiners a certificate duly signed by the members thereof certifying to the governor that said applicant possesses all of the qualifications hereinbefore mentioned.

SEC. 2. The chief inspector of mines and any two of his assistants shall constitute a board of examiners for the examination of applicants for certificates of qualification to serve as foreman in coal mines, said two assistants to be designated and called into service at any time by the said chief inspector; and said chief inspector may on any occasion call any two assistant inspectors he may choose to act upon said board for such purpose, and at any time when his duty as chief inspector of mines necessitates his absence from the examination of applicants, such applicants may be examined by any two assistant inspectors which the chief inspector may designate: *Provided*, He shall be careful to designate only such assistants as examiners in his absence as he shall know to be thoroughly equipped and qualified to act as such examiners. Said board shall meet at such times and places as the chief inspector of mines shall from time to time order, and for their services as examiners they shall receive no extra compensation, but only the salary and traveling expenses as now provided by law, that is, their services as examiners shall be reckoned and in fact shall be considered and treated as part of the duties of their office.

SEC. 3. Six months after this act goes into effect, no owner, lessee, or operator of a coal mine in which as many as ten persons are employed at one time shall employ as mine foreman any person who has not been granted a certificate of qualification to the effect that he has been examined by the board of examiners provided for in the preceding section of this act and has been found fit and competent as herein required; and said board of examiners shall in no event grant any certificate to any person who does not satisfy said board that he is a person of good moral character and of his sobriety, and that he possesses a thorough knowledge of the different systems of working and ventilating coal mines and of the nature and properties of mine gases, dust and fire damp, and shall have a thorough and practical knowledge of mining gained by at least five years' experience in and at mines: *Except and provided*, That any person who for four years prior to the passage of this act has served as mine foreman or assistant mine foreman in coal mines may upon application therefor and upon satisfactory evidence presented to said board of examiners as to his term of service and as to his character for morality and sobriety, be granted a certificate of qualification without such examination, which certificate shall be known as a "service certificate" and shall be so designated on its face. Each applicant for examination shall, before he is examined, pay a fee of two dollars and fifty cents to the auditor of public accounts, who shall issue his receipt therefor, which receipt the applicant shall present to the chief inspector of mines or to such member of the board as may at any time be designated to receive the same, and each applicant for a "service certificate" shall likewise pay a fee of two dollars and fifty cents to the auditor of public accounts and shall likewise present the auditor's receipt before such certificate may be issued to him; and all fees so paid shall be turned into the treasury to the credit of the general-expenditure fund. The chief inspector shall keep a record of all proceedings of the board, including the names and addresses of persons who apply for examination or for "service certificates," and of the certificates that have been granted; and the board is hereby authorized to cancel any certificate upon satisfactory evidence that the person to whom it has been issued has been guilty of violating instructions to comply with the requirements of the mining laws, or who has proven inefficient. The certificate to be granted to applicants who pass the examination herein provided for, shall in substance state that the applicant has been examined under the provisions of this act and has been found to possess the qualifications required by law. The chief inspector shall formulate the necessary blank certificates and cause same to be printed by the public printer in such quantities as may be needed from time to time.

Sec. 4. In all coal mines in this State in which as many as ten persons are usually employed at one time, wherein explosive gases are known to generate or exist in dangerous quantities, or coal dust is known to accumulate or exist in dangerous quantities, the owner, lessee or operator shall, when so ordered by the chief inspector of mines, or by an assistant inspector of mines, when approved by the chief inspector, employ and keep a sufficient number of practical and experienced men, to be known and designated as "shot firers" whose exclusive duty it shall be to set off and discharge the shots in all blasting in the workings of the said mines, but no "shot firer" shall fire any shot which in his judgment, after due inspection, shall not be a workmanlike and practical shot.

Sec. 5. Said shot firers shall immediately after the completion of their work post a notice in a conspicuous place at the mines in which shall be indicated the number of shots fired also the number of shots they did not fire, if any, specifying the number of the room and the designation of the entry, and give their reasons for not firing the same. The owner or operator of said mines shall provide reasonable and proper means for posting said notice. Said "shot firers" shall also keep a daily permanent record in a book, to be furnished them by said owner or operator, in which they shall enter the number of shots or blasts fired, the number of shots or blasts failing to explode, the number of "blown-out" shots, and the number of shots or blasts that in their judgment were not properly prepared and which they refused to fire, giving their reasons for the same. Said records shall be in the custody of the mine manager or superintendent and shall be available to inspection at all reasonable times by parties interested, and shall be open for inspection by the chief inspector of mines and the assistant inspectors. Said "shot firers" shall be treated and considered as employees and agents of said owner or operator.

Sec. 6. Said "shot firers" shall not do any blasting or exploding of shots or firing whatever until each and every miner and employee is out of the mine, except said "shot firers," mine superintendent, mine manager, mine foreman, and the person or persons necessarily employed in charge of pumps and stables in said mines, and any person in said mine, whose duty it is to go out of said mine before said firing, blasting and exploding takes place under the provisions of this act who willfully fails or refuses to go out of said mine as herein provided shall be fined in any sum not exceeding fifty dollars in the discretion of the court or jury.

Sec. 7. Each owner, lessee or operator of every mine to which the mining laws of the State apply, shall provide and furnish to the miners employed in said mine a sufficient number of caps and props, said props to be sawed square at each end, to be used by said miners in securing the roof in their rooms, and at such other working places where by law or custom of those usually engaged in such employment it is the duty of said miners to keep the roof propped, after the miner has selected and worked the same.

Sec. 8. Except as herein otherwise provided, any willful neglect or failure or refusal of any owner, lessee, or operator of a coal mine, or of any person employed in such mine, to comply with the provisions of this act affecting such owner, lessee, operator, or person, or any attempt to obstruct or interfere with any person in the discharge of the duties imposed upon such person, shall be deemed a misdemeanor, punishable by a fine of not less than one hundred dollars and not more than two hundred dollars.

Approved March 20, 1908.

CHAPTER 63.—*Mines—Investigation of gases, etc.*

SECTION 5. * * * As a contribution toward a better knowledge of the requirements for the safe working of the mines of the State, the technological work of the [state geological, topographical, and agricultural] survey shall include an investigation of mines, gases and coal dusts and of such other matters as are appropriate, to such extent as the means of the survey may permit

Approved March 25, 1908.

CHAPTER 66.—*Employment of children—Age limit—Inspection of factories.*

SECTION 1. No child under fourteen years of age shall be employed, permitted or suffered to work in or in connection with any factory, workshop, mine, mercantile establishment, store, business office, telegraph office, restaurant, hotel, apartment house or in the distribution or transmission of merchandise or messages. It shall be unlawful for any person, firm or corporation to employ any child under fourteen years of age in any business or service whatever, during any part of the term during which the public schools of the district in which the child resides are in session.

SEC. 2. No child between fourteen and sixteen years of age shall be employed, permitted or suffered to work in any factory, workshop, mine, or mercantile establishment, unless the person or corporation employing him procures and keeps on file and accessible to the truant officers of the town or city, and to the labor inspector, an employment certificate as hereinafter prescribed, and keep two complete lists of all such children employed therein, one on file and one conspicuously posted near the principal entrance of the building in which such children are employed. On termination of the employment of a child so registered, and whose certificate is so filed, such certificate shall forthwith be surrendered by the employer to the child or its parent or guardian or custodian. The labor inspector may make demands on an employer in whose establishment a child apparently under the age of sixteen years is employed or permitted or suffered to work, and whose employment certificate is not then filed as required by this act, that such employer shall either furnish him within ten days, evidence satisfactory to him that such child is in fact over sixteen years of age, or shall cease to employ, or permit or suffer such child to work therein. The labor inspector may require from such employer the same evidence of age of such child as is required on the issuance of an employment certificate, and the employer furnishing such evidence shall not be required to furnish any further evidence of the age of the child. In case such employer shall fail to produce and deliver to the inspector within ten days after such demand such evidence of age herein required of him, and thereafter continue to employ such child, or permit or suffer such child to work in such establishment, proof of the giving of such notice and of such failure to produce and file such evidence shall be prima facie evidence in any prosecution brought for violation of the provision that such child is under sixteen years of age and is unlawfully employed.

SEC. 3. An employment certificate shall only be approved by the superintendent of schools or by a person authorized by him in writing, or, where there is no superintendent of schools, by a person authorized by the school board: *Provided*, That no member of a school board or other person authorized as aforesaid shall have authority to approve such certificate for any child then in or about to enter his own employment, or the employment of a firm or corporation of which he is a member, officer or employee.

SEC. 4. The persons authorized to issue employment certificates shall not issue such certificates until he has received, examined, approved, and filed the following papers duly executed: (1) The school record of such child properly filled out and signed as provided herein below. (2) A passport or duly attested transcript of the certificate of birth or baptism or other religious record, showing the date and place of birth of such child. A duly attested transcript of the birth certificate filed according to law with any officer charged with the duty of recording births, shall be sufficient evidence of the age of such child. (3) The affidavit of the parent, guardian or custodian of a child, which shall be required, however, only in case such last-mentioned transcript of the certificate of birth be not produced and filed, showing the place and date of birth of such child; which affidavit must be taken before the officer issuing employment certificates, who is hereby authorized and required to administer such oath, and who shall not demand or receive a fee therefor. h employment certificate shall not be issued until such child has personally appeared before and been examined by the officer issuing the certificates, and until such officer shall, after making examination, file and sign in his office a statement that the child can read and legibly write simple sentences in the English language and that in his opinion the child is fourteen years of age or upward and has reached the normal development of a child of its age, and is in sound health and is physically able to perform the work which it intends to do. In doubtful cases such physical fitness shall be determined by a medical officer of the board or department of health, or by the county physician. Every employment certificate shall be signed in the presence of the child in whose name it is issued.

SEC. 5. Such certificate shall state the date and place of birth of the child, and describe the color of the hair and eyes, the height and weight and any distinguishing facial marks of such child, and that the papers required by the preceding section have been duly examined, approved and filed and that the child named in such certificate has appeared before the officer signing the certificate and has been examined.

SEC. 6. The school record above mentioned shall be signed by the principal or chief teacher of the school which such child has last attended and shall be furnished, on demand, to a child entitled thereto. It shall contain a statement certifying that the child has regularly attended the public schools or schools equivalent thereto or parochial schools for not less than one hundred days during the school year previous to his arriving at the age of fourteen years or during the year previous to applying for such school records, and is able to read and write simple sentences in the English language, and has received during such period instruction in reading, spelling, writing and geography and is familiar with the fundamental operations of arithmetic up to and including common fractions. Such school record shall also give the age and residence of the child, as shown on the records of the school and the name of its parent, or guardian or custodian: *Provided*, That upon the filing with the person authorized to issue employment certificates of the affidavit of the applicant or of his or her parent, guardian or custodian, showing that diligent effort has been made to obtain the school record hereby required and that it can not be obtained, then the person authorized to issue the certificate may issue such a certificate without having received such school record, but it shall be his duty, in such case, to examine the applicant as to his or her proficiency in each of the studies mentioned in this section; and in such case the employment certificate shall show that such examination was had in lieu of the filing of the school record.

SEC. 7. The local board of education or the school board of a city, town or district, as the case may be, shall transmit between the first and tenth of each month, to the office of the labor inspector, a list of the names of the children to whom certificates have been issued during the previous month.

SEC. 8. No person under the age of sixteen years shall be employed or suffered or permitted to work at any gainful occupation more than sixty hours in any one week, not [sic] nor more than ten hours in any one day; or before the hour of seven o'clock in the morning or after the hour of seven in the evening. Every employer shall post in a conspicuous place in every room where such minors are employed a printed notice, stating the hours required of them each day of the week, the hours of commencing and stopping work and the hours when the time or times allowed for dinner or for other meals begin and end. The printed form of such notice shall be furnished by the state labor inspector, and the employment of any minor for longer time in any day so stated shall be deemed a violation of this section.

SEC. 9. Whoever employs a child under sixteen years of age, and whoever having under his control a child under such age permits such child to be employed in violation of section one, two or eight of this act, shall, for such offense, be fined not more than fifty dollars, and whoever continues to employ any child in violation of either of said sections of this act after being notified by a truant officer or a labor inspector thereof, shall for every day thereafter that such employment continues, be fined not less than five nor more than twenty dollars. A failure to produce to a truant officer or labor inspector any employment certificate or list required by this act shall be prima facie evidence of the illegal employment of any person whose employment certificate is not produced, or whose name is not so listed. Any corporation or employer retaining employment certificates in violation of section two of this act shall be fined ten dollars. Every person authorized to sign the certificate prescribed by section five of this act, who knowingly certifies to any materially false statement therein shall be fined not more than fifty dollars, nor less than ten dollars.

SEC. 10. Truant officers may visit the factories, workshops, mines, and mercantile establishments in their several towns and cities and ascertain whether any minors are employed therein contrary to the provisions of this act, and they shall report any cases of such illegal employment to the superintendent of schools and to the labor inspector. Labor inspectors and truant officers may require that the employment certificates and lists provided for in this act, of minors employed in such factories, workshops, mines or mercantile establishments, shall be produced for their inspection. Complaints for offenses under this act shall be brought by the labor inspectors.

SEC. 11. No child under the age of sixteen years shall be employed at sewing belts, or to assist in sewing belts, in any capacity whatever, nor shall any child adjust any belt to any machinery; they shall not oil or assist in oiling, wiping or cleaning machinery; they shall not operate, or assist in operating circular or band saws, wood shapers, wood joiners, planers, sandpaper or wood-polishing machinery, emery or polishing wheels used for polishing sheet metal, wood turning or boring machinery, stamping machines in sheet-metal and tinware manufacturing, stamping machines in washer and nut factories, operating corrugating rolls, such as are used in roofing factories, nor shall they be employed in operating any steam boiler, steam machinery, or other steam-generating apparatus, or as pin boys in any bowling alley; they shall not operate or assist in operating dough brakes, or cracker machinery of any description, wire or iron straightening machinery, nor shall they operate or assist in operating rolling-mill machinery, punches or shears, washing, or grinding or mixing mills, or calendar rolls in rubber manufacturing, nor shall they operate or assist in operating laundry machinery, nor shall such children be employed in any capacity in preparing any composition in which dangerous or poisonous acids are used, and they shall not be employed in any capacity in the manufacture of paints, colors or white lead, nor shall they be employed in any capacity whatever in operating or assisting to operate any passenger or freight elevator, nor shall they be employed in any capacity whatever in the manufacture of goods for immoral purposes, nor in any theatre, concert hall, or place of amusement wherein intoxicating liquors are sold, nor shall females under sixteen years of age be employed in any capacity where such employment compels them to remain standing constantly. Nor shall any child under sixteen years of age be employed at any occupation dangerous or injurious to health or morals, or to lives or limbs, and as to these matters, the decision of the county physician or city health officer, as the case may be, shall be final.

SEC. 12. It shall be the duty of the owner of any manufacturing establishment, where any person under sixteen years of age is employed, his agents, superintendents or other persons in charge of same, to furnish and supply, when practicable, or cause to be furnished and supplied to him, belt shifters or other safe mechanical contrivance for the purpose of throwing belts on or off pulleys; and, whenever practicable, machinery therein shall be provided with loose belts. All vats, pans, saws, planes, cogs, gearing, belting, set screws and machinery of every description therein, which is palpably dangerous, where practicable, shall be properly guarded; and no person shall remove or make ineffective any safeguard around or attached to any planer, saw, belting, shafting or other machinery, or around any vat or pan, while the same is in use, unless for the purpose of immediately making repairs thereto, and all such safeguards shall be promptly replaced. No person under eighteen years of age shall be allowed to clean machinery while in motion.

SEC. 13. Suitable and proper wash rooms and water-closets shall be provided in each manufacturing establishment, where any person under sixteen years of age is employed, and such water-closets shall be properly screened and ventilated and be kept at all times in a clean condition; and if girls under sixteen years of age be employed in any such establishment, the water-closet shall have separate approaches and be kept separate and apart from those used by men. All closets shall be kept free from obscene writing and marking. A dressing room shall be provided for such girls when the nature of their work is such as to require any change of clothing.

SEC. 14. Every person, firm, corporation, association, individual or partnership employing girls under sixteen years of age in any manufacturing, mechanical or mercantile industry, laundry, workshop, renovating works, or printing offices in this Commonwealth, shall provide seats for the use of the girls so employed, and shall permit the use of such by them when not necessarily engaged in the active duties for which they are employed.

Sec. 15. The walls and ceilings of each room in every manufacturing establishment where any person under sixteen years of age is employed shall be limewashed or painted, when, in the opinion of the labor inspector, it shall be conducive to the health or cleanliness of the persons working therein.

Sec. 16. Grand juries shall have inquisitorial powers to investigate violations of this act; also shall county judges and circuit judges, and judges of the circuit courts of the State shall specially charge the grand jury at the beginning of each term of the court to investigate violations of this act.

Sec. 17. A copy of this act shall be conspicuously posted and kept in each workroom of every manufacturing establishment, mill, mine or workshop or mercantile or printing establishment, theater, bowling alley, telegraph, telephone or public messenger company or laundry in this Commonwealth.

Sec. 18. Any adult person who violates any of the provisions of this act or who suffers or permits any child to be employed in violation of its provisions, shall be deemed guilty of a misdemeanor, and on conviction, unless otherwise herein expressly provided shall be punished by a fine of not more than fifty dollars and not less than twenty-five dollars for the first offense, and for each subsequent offense by imprisonment for not more than ninety days and not less than ten days, or by a fine of not less than fifty dollars nor more than two hundred dollars, or by both fine and imprisonment.

Sec. 19. Whereas there are many children between the ages of fourteen and sixteen now in employments for which an employment certificate is required by this act; now, therefore, in order to provide ample time for compliance herewith by obtaining the proof of birth and the school record herein required, it is hereby enacted that the provisions of this act as to the requirement of an employment certificate shall not go into effect until the first day of September, nineteen hundred and eight.

And whereas there are some children between the ages of fourteen and sixteen who are now in employments for which an employment certificate is required by this act, who can not comply with the educational test established by this act and who would find it a real hardship to be thus expelled from their employment without a full opportunity to prepare themselves for that test; now, therefore, it is hereby enacted that the requirement of the filing of a school record, or of mental examination in default thereof, as a prerequisite to the issuance of an employment certificate, shall not be effective until the first day of September, nineteen hundred and nine; but from the first day of September, 1908, to the first day of September, 1909, employment certificates shall be issued to children between the ages of fourteen and sixteen years upon the proof of the birth and of physical fitness required by section three hereof.

Approved March 18, 1908.

MARYLAND.

ACTS OF 1908.

Chapter 724.—*Railroads—Crews for freight trains.*

(Page 71.)

Section 1. Article 23 of the Code of Public General Laws of Maryland of 1904 is hereby amended by adding thereto certain sections to follow section 300 of said article, to be known as sections 300k, 300l, 300m, 300n and 300p.

Sec. 300k. It shall be unlawful for any railroad company doing business in the State of Maryland or any receiver of such railroad company to run or operate over its road or any part of its road, or suffer or permit to be run or operated over its road or any part of its road, any freight train consisting of thirty or more freight or other cars, exclusive of caboose and locomotive, with less than a full train crew, consisting of six persons, to wit: One engineer, one fireman, one conductor, one flagman and two brakemen.

Sec. 300l. Any such railroad company or any such receiver violating any of the provisions of sections [sic] 300k of this act shall be liable to a penalty of five hundred dollars for each and every such violation, to be recovered in a civil suit or suits to be brought by the attorney-general of the State of Maryland in the name of this State; and it shall be the duty of such attorney-general without further authorization to bring such suit or suits upon duly verified information being presented to or lodged with him of such violation having occurred, and the affidavits of at least two citizens of the State of Maryland that such violation has occurred shall be taken and deemed to be duly verified information for the purposes of this act.

SEC. 300m. It shall be the duty of the attorney-general of the State of Maryland to enforce the provisions of sections 300k and 300l of this act, and all powers granted to the said attorney-general for the enforcement of any other act or acts are hereby granted to him for the purpose of the enforcement of said provisions of this act.

SEC. 300n. Any employee of such railroad company or of any such receiver who may be killed or injured by any train which was run or operated contrary to the provisions of section 300k of this act, or who may be k[i]lled or injured as a result of any act of any person employed contrary to the provisions of section 300k of this act shall not be deemed thereby to have assumed the risk thereby occasioned, although continuing in the employment of such railroad company or of such receiver, after the unlawful running or operating of such train or the unlawful employment of such person has been brought to his knowledge; nor shall any such employee be held to have contributed to his death or injury in any case where such railroad company or such receiver shall have violated any of the provisions of section 300k of this act when such violation contributed to the deaths [sic] or injury of such employee; and all questions of negligence, or either or both, arising in cases brought under or by virtue of said section of this act shall be for the jury.

SEC. 300p. The invalidity of any portion of this act shall not affect the validity of any portion thereof which can be given effect without such invalid part.

Approved April 8, 1908.

CHAPTER 85.—*Hours of labor of employees on public works—Baltimore.*

(Page 613.)

SECTION 1. The act of 1898, chapter 458, of the Code of Public Local Laws, relating to the hours of labor of mechanics and laborers upon city work, is hereby repealed and reenacted to read as follows:

Section 2. Eight hours shall constitute a day's work for all laborers, workmen or mechanics, who may be employed by or on behalf of the mayor and city council of Baltimore, except in cases of extraordinary emergency, which may arise in time of war or in cases where it may be necessary to work more than eight hours per calendar day, for the protection of property or human life: *Provided*, That in all such cases the laborer, workman or mechanic so employed and working to exceed eight hours per calendar day shall be paid on the basis of eight hours constituting a day's work: *Provided further*, That not less than the current rate of per diem wages in the locality where the work is performed shall be paid to laborers, workmen and mechanics so employed by or on behalf of the mayor and city council of Baltimore; and laborers, workmen or mechanics employed by contractors or subcontractors in the execution of any contract or contracts within the city of Baltimore on any public work, shall be deemed to be employed by or on behalf of the mayor and city council of Baltimore.

Sec. 3. All contracts hereafter made by or on behalf of the mayor and city council of Baltimore with any person or persons or corporation, for the performance of any work with the city of Baltimore, shall be deemed and considered as made upon the basis of eight hours constituting a day's work, and it shall be unlawful for any such person or persons, or corporation to require or permit any laborer, workman or mechanic to work more than eight hours per calendar day in doing such work, except in the cases and upon the conditions provided in section 2 of this act.

Sec. 4. Any officer of the mayor and city council of Baltimore, or any person acting under or for such officer, or any contractor or subcontractor or other person acting for them, violating any of the provisions of this act, shall for each and every offense be fined not less than ten dollars nor more than fifty dollars for each and every offense, one-half of such fine to go to the informer, said fines to be collected as other fines are collected by law.

Sec. 5. The provisions of this act shall not apply to the employees of the fire department, Bay View Asylum or the Baltimore City Jail.

Approved March 12, 1908.

CUMULATIVE INDEX OF LABOR LAWS AND DECISIONS RELATING THERETO.

[This index will include all labor laws enacted since January 1, 1908, as they appear in successive issues of the Bulletin, beginning with Bulletin No. 80, the issue of January, 1909. Laws enacted previously appear in the Twenty-second Annual Report of the Commissioner of Labor. The decisions indexed under the various headings relate to the laws on the same subjects without regard to their date of enactment and are indicated by the letter "D" in parenthesis following the name of the State.]

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DIRECTORY OF BUREAUS OF LABOR IN THE UNITED STATES AND IN FOREIGN COUNTRIES.

State.	Name of bureau.	Title of chief officer.	Location of bureau.
UNITED STATES.			
United States	United States Bureau of Labor	Commissioner	Washington, D. C.
California	Bureau of Labor Statistics	Commissioner	San Francisco, Cal.
Colorado	Bureau of Labor Statistics	Deputy Commissioner	Denver, Colo.
Connecticut	Bureau of Labor Statistics	Commissioner	Hartford, Conn.
Idaho	Bureau of Immigration, Labor, and Statistics.	Commissioner	Boise, Idaho.
Illinois	Bureau of Labor Statistics	Secretary	Springfield, Ill.
Indiana	Bureau of Statistics	Chief	Indianapolis, Ind.
Iowa	Bureau of Labor Statistics	Commissioner	Des Moines, Iowa.
Kansas	Bureau of Labor Statistics	Commissioner	Topeka, Kans.
Kentucky	Department of Agriculture, Labor, and Statistics.	Commissioner	Frankfort, Ky.
Louisiana	Bureau of Statistics of Labor	Commissioner	New Orleans, La.
Maine	Bureau of Labor Statistics	Commissioner	Augusta, Me.
Maryland	Bureau of Industrial Statistics	Chief	Baltimore, Md.
Massachusetts	Bureau of Statistics of Labor	Chief	Boston, Mass.
Michigan	Bureau of Labor and Industrial Statistics.	Commissioner	Lansing, Mich.
Minnesota	Bureau of Labor	Commissioner	St. Paul, Minn.
Missouri	Bureau of Labor Statistics and Inspection.	Commissioner	Jefferson City, Mo.
Montana	Bureau of Agriculture, Labor, and Industry.	Commissioner	Helena, Mont.
Nebraska	Bureau of Labor and Industrial Statistics.	Deputy Commissioner	Lincoln, Nebr.
New Hampshire	Bureau of Labor	Commissioner	Concord, N. H.
New Jersey	Bureau of Statistics of Labor and Industries.	Chief	Trenton, N. J.
New York	Department of Labor	Commissioner	Albany, N. Y.
North Carolina	Bureau of Labor Statistics and Printing.	Commissioner	Raleigh, N. C.
North Dakota	Department of Agriculture and Labor.	Commissioner	Bismarck, N. Dak.
Ohio	Bureau of Labor Statistics	Commissioner	Columbus, Ohio.
Oklahoma	Department of Labor	Commissioner	Guthrie, Okla.
Oregon	Bureau of Labor Statistics and Inspection of Factories and Workshops.	Commissioner	Salem, Oreg.
Pennsylvania	Bureau of Industrial Statistics	Chief	Harrisburg, Pa.
Rhode Island	Bureau of Labor Statistics	Commissioner	Providence, R. I.
Virginia	Bureau of Labor and Industrial Statistics.	Commissioner	Richmond, Va.
Washington	Bureau of Labor	Commissioner	Olympia, Wash.
West Virginia	Bureau of Labor	Commissioner	Wheeling, W. Va.
Wisconsin	Bureau of Labor Statistics	Commissioner	Madison, Wis.
FOREIGN COUNTRIES.			
Argentina	Departamento Nacional del Trabajo.	Presidente	Buenos Aires.
Austria	K. K. Arbeitsstatistisches Amt im Handelsministerium.	Vorstand	Wien.
Belgium	Office du Travail (Ministère de l'Industrie et du Travail).	Directeur Général	Bruxelles.
Canada	Department of Labor	Minister of Labor	Ottawa.
Canada: Ontario.	Bureau of Labor (Department of Public Works).	Secretary	Toronto.
Chile	Oficina de Estadística del Trabajo	Jefe	Santiago.
Finland	Industristyrelsen (a)		Helsingfors.
France	Office du Travail (Ministère du Travail et de la Prévoyance Sociale).	Directeur	Paris.
Germany	Kaiserliches Statistisches Amt, Abteilung für Arbeiterstatistik.	Präsident	Berlin.
Great Britain and Ireland.	Labor Department (Board of Trade).	Commissioner of Labor.	London (43 Parliament st.).
Italy	Ufficio del Lavoro (Ministero di Agricoltura Industria e Commercio).	Direttore Generale	Rome.
Netherlands	Centraal Bureau voor de Statistiek (a)	Directeur	'S-Gravenhage.
New South Wales.	State Labor Bureau	Director of Labor	Sydney.
New Zealand	Department of Labor	Minister of Labor	Wellington.
Spain	Instituto de Reformas Sociales	Secretario General	Madrid.
Sweden	Afdelning för Arbetsstatistik (Kgl. Kommerskollegii).	Direktör	Stockholm.
Switzerland	Secrétariat Ouvrier Suisse (semi-official).	Secrétaire	Zürich.
Uruguay	Oficina del Trabajo (Ministero de Industrias, Trabajo é Instrucción Pública).		Montevideo.
International	International Labor Office	Director	Basle, Switzerland.

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[a] Issues a bulletin of labor.

LEADING ARTICLES IN PAST NUMBERS OF THE BULLETIN.

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No. 81—MARCH, 1909

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BULLETIN

OF THE

BUREAU OF LABOR.

No. 81. WASHINGTON. MARCH, 1909.

WHOLESALE PRICES, 1890 TO 1908.

INTRODUCTION.

In 1901 the Bureau of Labor collected data relating to the wholesale prices of the principal staple commodities sold in the United States for the period from 1890 to 1901, inclusive. The actual prices for the 12 years and the relative prices computed therefrom were published in Bulletin No. 39, issued in March, 1902. The purpose of the investigation was to furnish a continuous record of wholesale prices and to show the changes in the general price level from year to year. The investigation thus begun has been continued each year and the results published in the March issue of the Bulletin to show actual prices for the year immediately preceding and relative prices for the period since 1890. The present Bulletin contains actual prices for 1908 and relative prices for the 19 years from 1890 to 1908. In these reports wholesale prices have been presented for a large number of carefully selected representative staple articles secured in representative markets of the United States. That it would be impossible to secure prices for all articles in all markets is so apparent that the fact hardly need be stated. In the present report prices are given for 258 articles.

With few exceptions these articles are of the same description as those which have been covered in the preceding reports on this subject, though several commodities shown in the data for 1908 were not included in previous years.

This investigation shows that wholesale prices, considering the 258 commodities as a whole, receded from the high level of 1907, which was the year of highest prices of the 19-year period covered. The recession in 1908 carried prices back approximately to the level of 1906, but, with the exception of 1907 only, prices as shown by the 258 articles here considered are higher than in any other year during the 19-year period. The average for the year 1908 was 5.2 per cent below that for 1907; 0.2 per cent higher than that for 1906; 36.9 per cent higher than for 1897, the year of lowest prices during the 19-year period, and 22.8 per cent higher than the average for the 10 years from 1890 to 1899. The decline from the prices shown by the October, 1907, data continued without interruption until August of 1908, with the exception of a slight advance in July. Prices were at their lowest point of the year during the month of August, when they were 1.1 per cent below the average for the year 1908 and 7.3 per cent below the average for October, 1907, the highest point of the 19 years covered. The prices in December show an advance of 1.8 per cent over the prices in August, the month of lowest average prices during the year.

PRICES OF COMMODITIES, 1908 COMPARED WITH 1907.

Comparing 1908 with 1907, the groups showing the greatest decrease in prices were metals and implements, lumber and building materials, and cloths and clothing. Food, etc., was the only important group of commodities which showed an increase in price.

An examination of the prices of the various articles covered by the investigation shows that while there was a large average decrease for the year taken as a whole, the decrease in price did not extend to all groups nor to all commodities. Of the 258 articles for which wholesale prices were obtained 162 showed a decrease in the average price for 1908 as compared with 1907, 33 showed no change in the average price for the year, and 63 showed an increase in price. The following table divides the articles for which prices were secured into nine groups and shows for each group the number of articles covered, the per cent of decrease in the average price for 1908 as compared with that for 1907 for each group as a whole, and the number of articles that increased or decreased in price.

PER CENT OF DECREASE IN AVERAGE PRICES FOR 1908 AS COMPARED WITH AVERAGE PRICES FOR 1907, AND NUMBER OF ARTICLES THAT INCREASED OR DECREASED IN PRICE, BY GROUPS OF COMMODITIES.

Group.	Number of commodities.	Per cent of decrease in price.	Number of commodities showing—		
			Increase.	No change in price.	Decrease.
Farm products	20	2.9	8	....	12
Food, etc	57	a2.4	28	3	26
Cloths and clothing	66	7.7	4	8	54
Fuel and lighting	13	3.1	5	2	6
Metals and implements	38	12.6	1	10	27
Lumber and building materials	28	9.4	5	3	20
Drugs and chemicals	9	a.7	5	2	2
House furnishing goods	14	3.8	3	3	8
Miscellaneous	13	5.7	4	2	7
All commodities	258	5.2	63	33	162

a Increase.

From the above table it is seen that when the commodities are considered by groups, seven of the nine groups showed a decrease in price in 1908 as compared with 1907. In farm products, taken as a whole, there was a decrease in price of 2.9 per cent in 1908 below the average price for 1907, this decrease being the least of any of the seven groups showing a decrease. There was a decrease in the price of 12 of the 20 articles for which prices were obtained. Among the articles for which prices decreased were hay, sheep, cotton, hogs, and hides. Some articles that increased in price were corn, tobacco, oats, wheat, and cattle.

Food as a whole increased 2.4 per cent in the average price for 1908 as compared with 1907. In this group, 28 articles increased in price, 3 showed no change, and 26 decreased in price.

Among the articles showing an increase in price were beans, beef, flour, meal, sugar, rice, eggs, and fresh vegetables. No change took place in the price of crackers and in one quotation for loaf bread. The principal articles showing a decrease in price were butter, coffee, cheese, pork, mutton, canned peas, canned corn, and canned tomatoes. One of the varieties of fish showed an increase in the average price for the year, while other varieties showed a decrease in price.

Of the 66 articles included under cloths and clothing, 54 showed a decrease in price, 8 showed no change, and 4 showed an increase in price. In the group as a whole there was an average decrease of 7.7 per cent in price, the principal decrease being in the prices of cotton goods and silk.

In fuel and lighting as a group there was a decrease in price of 3.1 per cent. Petroleum increased in price, as did also some kinds of coal; other kinds of coal, and coke, decreased in price.

In the metals and implements group the decrease in the average price for 1908 below 1907 was 12.6 per cent, being the heaviest decline in price of any of the seven groups showing a decrease. Of a total of 38 articles in this group there was a decrease in the price of 27 articles, including copper, iron, lead, steel billets, nails, tin plate, etc. Ten articles, including steel rails, did not change in price, and in only one article, quicksilver, was there an increase in price.

Twenty of the 28 articles included under lumber and building materials decreased in price in 1908 as compared with 1907. Nearly all kinds of timber products showed a marked decrease in price, as did also brick, window glass, tar, turpentine, and plate glass. In this group as a whole there was a decrease in price of 9.4 per cent; 3 of the articles showed no change, and 5 articles increased in price in 1908 compared with 1907.

The increase in the average price of drugs and chemicals in 1908 over 1907 was 0.7 per cent, the articles showing the greatest increase in price being glycerin and alcohol. Quinine showed a marked decrease in price.

House furnishing goods as a whole decreased 3.8 per cent in price. The principal decrease in price was in glassware and cutlery. Three articles did not change in price, while 3 increased in price.

In the miscellaneous group there was a marked decrease in the prices of jute, rope, rubber, cotton-seed oil, and malt. There was no change in the price of tobacco, while there was an increase in the prices of proof spirits and 3 other articles. Taken together, the group of miscellaneous articles decreased in price 5.7 per cent. The per cent of increase or decrease in the average wholesale price for 1908 in each of the 258 articles as compared with the price for 1907 is shown on pages 224 to 227.

In addition to the classification into the nine groups named above, the 258 articles included in the investigation have been divided into two general groups, designated as raw commodities and manufactured commodities. Of course exact definitions of these classes can not be made, but the commodities here designated as raw may be said to be such as are marketed in their natural state and such as have been subjected to only a preliminary manufacturing process, thus converting them into a marketable condition, but not to a suitable form for final consumption, while the commodities here designated as manufactured are such as have been subjected to more than a preliminary factory manipulation and in which the manufacturing labor cost constitutes an important element in the price. In the group designated as raw are included all farm products, beans, coffee, eggs, milk, rice, pepper, tea, vegetables, raw silk, wool, coal, crude petroleum, copper ingots, pig lead, pig iron, bar silver, spelter, pig tin, brimstone, jute, and rubber—a total of 54 articles. All the other articles are classed as manufactured commodities.

As thus grouped it appears that the average wholesale price of raw commodities for 1908 was 5.9 per cent below that for 1907, and that the average wholesale price of manufactured commodities for 1908 was 5 per cent below that for 1907.

The following table shows the per cent that the average price for each month of the year 1908 was above or below the average price for the year, and in the last column the per cent of increase or decrease of the average December price above or below the average price for each preceding month:

COMPARISON OF AVERAGE PRICE FOR EACH MONTH OF 1908 WITH THE AVERAGE PRICE FOR THE YEAR, AND OF AVERAGE PRICE FOR DECEMBER, 1908, WITH THE AVERAGE PRICE FOR EACH PRECEDING MONTH OF THE YEAR.

Month.	Per cent of price per month—		Per cent of increase (+) or decrease (−) in December over each preceding month.
	Above average price for year.	Below average price for year.	
January	2.4		−1.7
February	1.3		− .6
March	1.1		− .5
April	1.0		− .3
May		0.3	+1.0
June		1.1	+1.7
July		.9	+1.6
August		1.1	+1.8
September		.8	+1.5
October		.6	+1.2
November		.6	+1.2
December	.7		

The average for wholesale prices in January, 1908, was 2.4 per cent above the average price for the year. In this month prices were at the highest point of the year. Prices declined each month from February to June, with a slight advance in July, followed by another decline in August. Prices reached their lowest point of the year in June and August, being 1.1 per cent below the average for 1908. Prices advanced again in September and October, remaining the same during November, and advanced slightly in December to 0.7 per cent above the average price for the year.

From the figures given in the last column of the table it is seen that the average of wholesale prices in December, 1908, was 1.7 per cent below the average in January and 1.8 per cent above the average in August, the month of lowest prices during the year.

The change that took place in wholesale prices month by month during 1908 in each of the 9 groups already referred to will be seen in the following table:

COMPARISON OF AVERAGE PRICE FOR EACH MONTH OF 1908 WITH AVERAGE PRICE FOR THE YEAR, AND OF AVERAGE PRICE FOR DECEMBER, 1908, WITH AVERAGE PRICE FOR EACH PRECEDING MONTH OF THE YEAR, BY GROUPS OF COMMODITIES.

Month.	Farm products.			Foods, etc.			Cloths and clothing.		
	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.
	Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.	
January	....	2.5	+4.2	....	0.1	+3.2	6.1	....	−6.8
February	....	3.2	+5.0	....	.7	+3.8	3.7	....	−4.6
March	0.8	....	+ .7	....	.3	+3.5	2.6	....	−3.6
April	1.4	....	+ .1	0.6	....	+2.6	1.4	....	−2.4
May	1.4	....	+ .2	....	2.0	+5.2	.6	....	−1.7
June	....	.2	+1.8	....	.2	+3.4	....	1.9	+ .8
July	.7	....	+ .9	....	.3	+3.5	....	2.1	+1.0
August	.5	....	+1.0	....	.5	+3.7	....	2.1	+1.0
September	....	.3	+1.9	1.1	....	+2.1	....	2.3	+1.2
October	.6	....	+1.0	1.7	....	+1.5	....	2.3	+1.2
November	.3	....	+1.3	1.1	....	+2.1	....	1.8	+ .7
December	1.6	....	....	3.2	....	....	....	1.1	....

COMPARISON OF AVERAGE PRICE FOR EACH MONTH OF 1908 WITH AVERAGE PRICE FOR THE YEAR, AND OF AVERAGE PRICE FOR DECEMBER, 1908, WITH AVERAGE PRICE FOR EACH PRECEDING MONTH OF THE YEAR, BY GROUPS OF COMMODITIES—Concluded.

Month.	Fuel and lighting.			Metals and implements.			Lumber and building materials.		
	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.
	Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.	
January	2.7		−1.3	1.6		−1.3	4.4		−1.9
February	1.3		(a)	1.0		− .8	3.8		−1.3
March	1.6		− .3	.4		− .2	1.6		+ .8
April		1.8	+3.1	.4		− .2	2.1		+ .3
May		2.3	+3.7	.3		− .1		1.1	+3.6
June		1.4	+2.7		0.5	+ .7		3.2	+5.8
July		1.2	+2.6		1.1	+1.4		3.2	+5.8
August		.5	+1.8		.7	+1.0		2.4	+4.9
September		.3	+1.6		.6	+ .8		2.0	+4.5
October		.1	+1.4		.5	+ .7		1.5	+4.0
November	.8		+ .5		.2	+ .5		.6	+3.0
December	1.3			.2			2.4		

Month.	Drugs and chemicals.			House furnishing goods.			Miscellaneous.			All commodities.		
	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.
	Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.	
January		0.8	+1.3	2.6		−5.6	2.3		−4.5	2.4		−1.7
February	0.6		− .2	2.6		−5.6	1.3		−3.5	1.3		− .6
March	.5		(a)	2.6		−5.6	.2		−2.5	1.1		− .5
April		.2	+ .6	2.6		−5.6	.6		−2.9	1.0		− .3
May		3.0	+3.5	2.6		−5.6	1.7		−3.9		0.3	+1.0
June		1.8	+2.3	.4		−3.5	1.0		−3.3		1.1	+1.7
July	2.1		−1.6	.1		−3.2	1.3		−3.6		.9	+1.6
August	1.5		−1.1		2.5	− .6		0.8	−1.5		1.1	+1.8
September	.7		− .3		2.5	− .6		1.2	−1.2		.8	+1.5
October		.6	+1.1		2.5	− .6		1.4	− .9		.6	+1.2
November		.2	+ .6		3.1	(a)		2.7	+ .3		.6	+1.2
December	.5				3.1			2.3		.7		

(a) Same as average price for December.

In January, 1908, the wholesale prices of farm products were 2.5 per cent below the average price for the year, and in February they were 3.2 per cent below, this being the lowest point of the year. During the eight months—March, April, May, July, August, October, November, and December—prices were above the average for the year. Prices for June and September were slightly below the average for the year. The highest point reached during the year was in December, being 5 per cent above the average price for February. The movement in prices during the year for each of the articles that enter into this and the other groups will be found in Table II, pages 300 to 324, or, if desired, the full details of the prices throughout the year may be found in Table I, pages 249 to 299.

Food commodities as a group reached their lowest price in May and attained their highest point in December, when they were 3.2 per cent above the average price for the year.

The increase in price in December as compared with May was 5.2 per cent. Food commodities increased in price each month from August to October, declined slightly in November, and advanced again in December. The December price was higher than that of any other month of the year.

The price of cloths and clothing was above the average for the year during the first five months and below the average for the other seven months. From January to July there was a decrease in price each month. The only months showing an increase in price over the previous month were November and December, when prices advanced slightly. The January price was 6.1 per cent above the average for the year and the December price was 6.8 per cent lower than the price for January.

The fuel and lighting group declined in price each month, with the exception of March, from January to May. The lowest price of this group was reached in May, when the price was 2.3 per cent below the average for the year. From June to December the price advanced each month, being in December 1.3 per cent above the average price for the year. The price in December was 3.7 per cent above the price in May, the month of lowest prices.

The group of metals and implements reached its lowest point of the year in July, when the price was 1.1 per cent below the average price for the year. From January to July, with the exception of April (which remained the same as March), there was a decline in price each month, while from that time to December the price advanced slightly each month. The December price was 0.2 per cent above the average for the year, but 1.3 per cent lower than the price for January.

The price of lumber and building materials in the month of January was 4.4 per cent above the average price for the year. With the exception of a slight advance in April the price declined each month from January to June, continuing at the same price during July. From August the price advanced each month until December, when the price was 2.4 per cent above the average for the year but was 1.9 per cent lower than the January price.

Drugs and chemicals during the months of February, March, July to September, and December were above the average price for the year, but during January, April, May, June, October, and November the price was below the yearly average. In December the price was 3.5 per cent higher than in May, the month of lowest prices, but 1.6 per cent lower than in July, the month of highest prices for this group during the year.

House furnishing goods were above the average price for the first seven months of the year and below the average for the remaining five months. This group reached the lowest point of the year during the months of November and December. The price in December was 5.6 per cent lower than the highest price of the year, which prevailed from January to May.

Miscellaneous articles in January were 2.3 per cent above the average price for the year and 2.7 per cent below the average price for the year in November. From July to November the average price declined each month, advancing slightly in December. With the exception of November the price in December was lower than during any other month of the year.

While 1908 was on the whole a year of declining prices, the price of a number of important articles advanced. Of the 258 articles included in this report, the prices of 107 articles were at the highest point during the year in January while only 20 articles attained their highest price in December.

A few of the articles showing a decline in price from that shown in the early part of the year are here noted. Barley declined from an average of $0.9960 in January to $0.6013 in June, this being a decline of 39.6 per cent. Cotton declined 21.1 per cent from January to October; hops declined 58.1 per cent from January to September; mackerel declined 28.6 per cent from January to October; milk declined 43.8 per cent from January to June; print cloths declined 27.3 per cent from January to September; coke declined 29.4 per cent from January to September; Bessemer pig iron declined 17.1 per cent from January to October; rosin declined 30 per cent from February to September; cedar shingles declined 17.8 per cent from January to October; malt declined 39.3 per cent from January to December; and rope declined 22.8 per cent from January to December. The price of 61 articles remained the same throughout the year 1908, and for only 8 articles was the average price for December lower than for any other month of the year. Attention is directed to a few of the articles which advanced in price during the year. Choice to extra steers advanced 32.1 per cent from February to June; corn advanced 37.7 per cent from February to September; hogs advanced 63 per cent from February to September; wheat advanced 16.7 per cent from July to December; eggs advanced 141.6 per cent from April to December; lard advanced 37.7 per cent from February to September; meal advanced 20.3 per cent from January to September; fresh beef in New York advanced 29.7 per cent from February to June; smoked hams advanced 35.7 per cent from February to July; ingot copper advanced 14.5 per cent from March to December; pig lead advanced 24.3 per cent from January to August; spelter advanced 17.2 per cent from January to December; tar advanced 46.2 per cent from March to October; jute advanced 30.8 per cent from February to August; rubber advanced 70.5 per cent from March to December. The average monthly prices for the several articles are given in Table II, pages 300 to 324.

The following table shows for both raw and manufactured commodities, according to the classification already explained, the per cent that prices in each month in 1908 were above or below the average prices of the year and the per cent of increase or decrease in December above or below each preceding month of the year:

COMPARISON OF AVERAGE PRICES OF RAW AND MANUFACTURED COMMODITIES FOR EACH MONTH OF 1908, WITH THE AVERAGE PRICES FOR THE YEAR, AND OF AVERAGE PRICES FOR DECEMBER, 1908, WITH THE AVERAGE PRICES FOR EACH PRECEDING MONTH OF THE YEAR.

Month.	Raw commodities.			Manufactured commodities.			All commodities.		
	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.	Per cent of price for month—		Per cent of increase (+) or decrease (−) in December as compared with each preceding month.
	Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.		Above average price for year.	Below average price for year.	
January		1.0	+6.4	3.2		−3.6	2.4		−1.7
February		1.3	+6.7	2.0		−2.6	1.3		− .6
March		.2	+5.6	1.5		−2.0	1.1		− .5
April		1.2	+6.6	1.5		−2.0	1.0		− .3
May		2.5	+8.0	.2		− .7		0.3	+1.0
June		1.4	+6.8		0.9	+ .3		1.1	+1.7
July		.6	+5.9		1.1	+ .5		.9	+1.6
August		.2	+5.5		1.4	+ .8		1.1	+1.8
September	0.1		+5.3		1.1	+ .5		.8	+1.5
October	1.3		+4.0		1.1	+ .5		.6	+1.2
November	1.8		+3.4		1.1	+ .6		.6	+1.2
December	5.3				.6		.7		

From this table it is seen that there was a greater fluctuation in the prices of raw commodities during the year than in the prices of manufactured commodities. In May, the price of raw commodities was 2.5 per cent below the average price for the year, while in December the price was 5.3 per cent above the average price for the year. In manufactured commodities, the lowest prices were in August, when the average was 1.4 per cent below the average price for the year, while in January the average was 3.2 per cent higher than the average price for the year. Thus, May marked the lowest prices in raw commodities and August marked the lowest prices in manufactured commodities, while December marked the highest prices in raw commodities and January the highest prices in manufactured commodities. Prices of raw commodities in December averaged 6.4 per cent higher than in January and 8 per cent higher than in May. The December prices of manufactured commodities averaged 3.6 per cent lower than those prevailing in January and 0.8 per cent higher than those which prevailed in August.

PRICES OF COMMODITIES, 1908 COMPARED WITH PREVIOUS YEARS BACK TO 1890.

Thus far attention has been directed to the changes that took place in wholesale prices in the year 1908 as compared with 1907 and the movement of wholesale prices month by month during the year 1908. Attention is now directed to the course of wholesale prices from year to year since 1890. The following table shows, by relative prices, the changes in the average wholesale prices of the articles for which prices were secured from 1890 to 1908, inclusive. The relative price used in this table is simply a percentage. The base on which the relative price is computed is not the price in any one year, but the average price for the ten years from 1890 to 1899, inclusive. The reason for adopting this base is fully explained on pages 228 and 229. Relative prices, such as are here shown, are also sometimes spoken of as relative numbers or as index numbers. For explanation of the method used in computing the relative price of all commodities for each year see pages 231 and 239.

To assist in comparing wholesale prices in 1908 with the prices each year back to 1890, another column is given in the table showing the per cent of the increase in prices for 1908 over the prices for each of the preceding years.

RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND PER CENT OF INCREASE IN PRICES FOR 1908 OVER PRICES FOR EACH PRECEDING YEAR.

Year.	Relative price of all commodities. (a)	Per cent of increase in 1908 over each preceding year.	Year.	Relative price of all commodities. (a)	Per cent of increase in 1908 over each preceding year.
1890	112.9	8.8	1900	110.5	11.1
1891	111.7	9.9	1901	108.5	13.2
1892	106.1	15.7	1902	112.9	8.8
1893	105.6	16.3	1903	113.6	8.1
1894	96.1	27.8	1904	113.0	8.7
1895	93.6	31.2	1905	115.9	6.0
1896	90.4	35.8	1906	122.5	.2
1897	89.7	36.9	1907	129.5	[b] 5.2
1898	93.4	31.5	1908	122.8	....
1899	101.7	20.7			

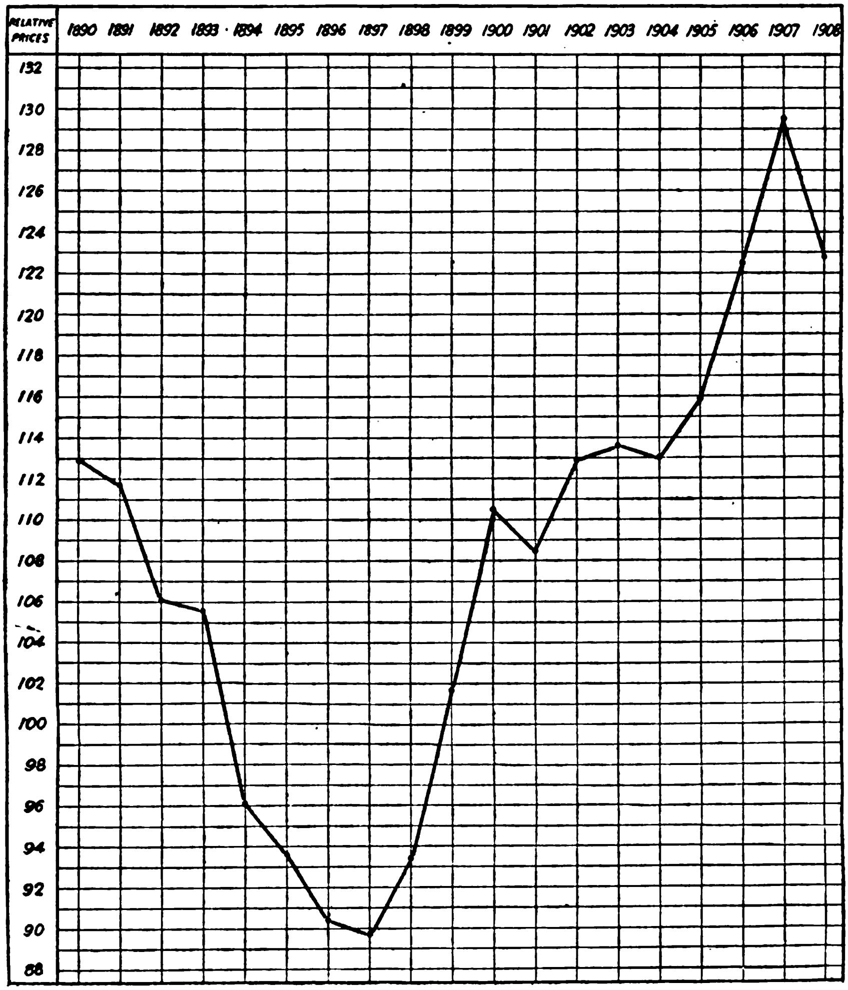
[a] Average price for 1890-1899=100.0.

[b] Decrease.

The relative wholesale prices during the years from 1890 to 1908 set forth in tabular form in the preceding table, are shown also in the graphic table which follows:

RELATIVE PRICES OF ALL COMMODITIES, 1890 TO 1908.

[Average price for 1890 to 1899=100.0.]



This table shows that the average wholesale prices declined each year from 1890 to 1897, or 8 years of constantly falling prices. From 1898 to 1908 has been a period of advancing prices with only 3 of the 11 years showing a decrease from the prices of the previous year. These 3 years were 1901, 1904, and 1908, the decline of the 1908 prices from those of 1907 being heavier than the decline in either 1901 or 1904. The lowest year of the 19-year period was 1897 and the highest was 1907. The wholesale prices in 1908 were 36.9 per cent higher than those of 1897 and 5.2 per cent below those of 1907.

The average of wholesale prices of all commodities for 1890 was 112.9 per cent of the average of wholesale prices for the years from 1890 to 1899; in other words, the average of wholesale prices in 1890 was 12.9 per cent higher than the average for the 10-year period named.

In 1891 relative wholesale prices declined to 111.7; that is, to a point where the average wholesale price for the year was 11.7 per cent above the average price for the 10 years from 1890 to 1899.

In 1892 relative wholesale prices dropped to 106.1 and in 1893 to 105.6. In the next year, 1894, wholesale prices fell to 96.1, a point 3.9 below the average price for the 10-year base period. In each of the three succeeding years wholesale prices declined until in 1897 they reached 89.7; that is, 10.3 per cent below the average price for the 10-year period. In each of the 3 years next succeeding wholesale prices advanced, in 1900 reaching 110.5. In 1901 wholesale prices dropped back to 108.5. The next year, however, marked an increase, prices in 1902 being on an average a restoration of the prices in 1890, namely, 112.9. In 1903 prices advanced to 113.6. The next year, 1904, showed a slight decline, nearly back to the prices of 1890 and 1902. In 1905 prices advanced to 115.9; in 1906 prices advanced to 122.5; in 1907 prices advanced again, reaching 129.5, a higher level than in any other year of the 19 years covered by the investigation. In 1908 prices declined to 122.8 or 22.8 per cent above the average price for the 10 years from 1890 to 1899.

The last column of the table (page 204) shows that the price in 1908 was 5.2 per cent below the price in 1907, 8.8 per cent above the price in 1890, and 36.9 per cent above the price in 1897, the year of lowest average prices within the last 19 years.

The relative prices appearing in this table are based on 251 articles in 1890 and 1891, on 253 articles in 1892, on 255 articles in 1893, on 256 articles in 1894, on 258 articles from 1906 to 1908, on 259 articles in 1895, 1904, and 1905, on 260 articles in 1896 and from 1899 to 1903, and on 261 articles in 1897 and 1898.

Having shown the movement in wholesale prices for the period from 1890 to 1908 in all commodities taken as a whole, a table is given showing the movement in each of the 9 groups previously referred to. This table gives for each group the relative prices and the per cent of increase or, in a few instances, decrease of prices for 1908, as compared with the prices for each preceding year.

RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND PER CENT OF INCREASE IN PRICES FOR 1908 OVER PRICES FOR EACH PRECEDING YEAR, BY GROUPS OF COMMODITIES.

Year.	Farm products.		Food, etc.		Cloths and clothing.		Fuel and lighting.		Metals and implements.	
	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year.
1890	110.0	21.0	112.4	7.3	113.5	3.0	104.7	24.9	119.2	5.2
1891	121.5	9.5	115.7	4.2	111.3	5.0	102.7	27.4	111.7	12.3
1892	111.7	19.2	103.6	16.4	109.0	7.2	101.1	29.4	106.0	18.3
1893	107.9	23.4	110.2	9.4	107.2	9.0	100.0	30.8	100.7	24.5
1894	95.9	38.8	99.8	20.8	96.1	21.6	92.4	41.6	90.7	38.3
1895	93.3	42.7	94.6	27.5	92.7	26.1	98.1	33.3	92.0	36.3
1896	78.3	70.0	83.8	43.9	91.3	28.0	104.3	25.4	93.7	33.8
1897	85.2	56.2	87.7	37.5	91.1	28.3	96.4	35.7	86.6	44.8
1898	96.1	38.5	94.4	27.8	93.4	25.2	95.4	37.1	86.4	45.1
1899	100.0	33.1	98.3	22.7	96.7	20.9	105.0	24.6	114.7	9.3
1900	109.5	21.6	104.2	15.7	106.8	9.5	120.9	8.2	120.5	4.1
1901	116.9	13.9	105.9	13.9	101.0	15.7	119.5	9.5	111.9	12.1
1902	130.5	2.0	111.3	8.4	102.0	14.6	134.3	[b] 2.6	117.2	7.0
1903	118.8	12.0	107.1	12.6	106.6	9.7	149.3	[b] 12.4	117.6	6.6
1904	126.2	5.5	107.2	12.5	109.8	6.5	132.6	[b] 1.4	109.6	14.4
1905	124.2	7.2	108.7	10.9	112.0	4.4	128.8	1.6	122.5	2.4
1906	123.6	7.7	112.6	7.1	120.0	[b] 2.6	131.9	[b] .8	135.2	[b] 7.2
1907	137.1	[b] 2.9	117.8	2.4	126.7	[b] 7.7	135.0	[b] 3.1	143.4	[b] 12.6
1908	133.1	....	120.6	....	116.9	....	130.8	....	125.4	....

Year.	Lumber and building materials.		Drugs and chemicals.		House furnishing goods.		Miscellaneous.		All commodities.	
	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year.	Relative price.[a]	Per cent of increase in 1908 over each preceding year.
1890	111.8	19.1	110.2	0.2	111.1	2.6	110.3	8.7	112.9	8.8
1891	108.4	22.8	103.6	6.6	110.2	3.4	109.4	9.6	111.7	9.9
1892	102.8	29.5	102.9	7.3	106.5	7.0	106.2	12.9	106.1	15.7
1893	101.9	30.6	100.5	9.9	104.9	8.7	105.9	13.2	105.6	16.3
1894	96.3	38.2	89.8	22.9	100.1	13.9	99.8	20.1	96.1	27.8
1895	94.1	41.4	87.9	25.6	96.5	18.1	94.5	26.9	93.6	31.2
1896	93.4	42.5	92.6	19.2	94.0	21.3	91.4	31.2	90.4	35.8
1897	90.4	47.2	94.4	16.9	89.8	26.9	92.1	30.2	89.7	36.9
1898	95.8	38.9	106.6	3.6	92.0	23.9	92.4	29.8	93.4	31.5
1899	105.8	25.8	111.3	[b] .8	95.1	19.9	97.7	22.7	101.7	20.7
1900	115.7	15.0	115.7	[b] 4.6	106.1	7.4	109.8	9.2	110.5	11.1
1901	116.7	14.1	115.2	[b] 4.2	110.9	2.8	107.4	11.6	108.5	13.2
1902	118.8	12.0	114.2	[b] 3.3	112.2	1.6	114.1	5.1	112.9	8.8
1903	121.4	9.6	112.6	[b] 2.0	113.0	.9	113.6	5.5	113.6	8.1
1904	122.7	8.5	110.0	.4	111.7	2.1	111.7	7.3	113.0	8.7
1905	127.7	4.2	109.1	1.2	109.1	4.5	112.8	6.3	115.9	6.0
1906	140.1	[b] 5.0	101.2	9.1	111.0	2.7	121.1	[b] 1.0	122.5	.2
1907	146.9	[b] 9.4	109.6	.7	118.5	[b] 3.8	127.1	[b] 5.7	120.5	[b] 5.2
1908	133.1	....	110.4	....	114.0	....	119.9	....	122.8	....

[a] Average price for 1890-1899=100.0.

[b] Decrease.

In this table the average relative prices of farm products are based on 16 articles from 1890 to 1907 and on 20 articles in 1908; of food, etc., on 53 articles from 1890 to 1892 and from 1904 to 1907, 54 from 1893 to 1903 and on 57 in 1908; of cloths and clothing, on 66 in 1908, on 70 articles in 1890 and 1891, 72 in 1892, 73 in 1893 and 1894, 75 in 1895, 1896, 1906, and 1907, and 76 from 1897 to 1905; of fuel and lighting, on 13 articles; of metals and implements, on 37 articles from 1890 to 1893, 38 in 1894 and 1895 and from 1899 to 1908, and 39 from 1896 to 1898; of lumber and building materials, on 26 articles from 1890 to 1894, 27 from 1895 to 1907 and on 28 in 1908; of drugs and chemicals, on 9 articles; of house furnishing goods, on 14 articles, and of miscellaneous, on 13 articles.

A study of the table shows that the group of farm products reached the lowest average in 1896 and the highest in 1907; that of food, etc., the lowest in 1896 and the highest in 1908; that of cloths and clothing, the lowest in 1897 and the highest in 1907; that of fuel and lighting, the lowest in 1894 and the highest in 1903; that of metals and implements, the lowest in 1898 and the highest in 1907; that of lumber and building materials, the lowest in 1897 and the highest in 1907; that of drugs and chemicals, the lowest in 1895 and the highest in 1900; that of house furnishing goods, the lowest in 1897 and the highest in 1907, while in the miscellaneous group the lowest average was reached in 1896 and the highest in 1907. The average for all commodities combined, as before stated, was lowest in 1897 and highest in 1907. Of the nine groups, it is seen that one reached its lowest point in 1894, one in 1895, three in 1896, three in 1897, and one in 1898. The highest point was reached by one group in 1900, by one in 1903, by six in 1907, and by one group in 1908.

In order to follow the movement in the two great classes—raw and manufactured commodities—the following table has been prepared. The articles included under each of the two groups are indicated on page 198.

RELATIVE PRICES OF RAW AND OF MANUFACTURED COMMODITIES, 1890 TO 1908, AND PER CENT OF INCREASE IN PRICES FOR 1908 OVER PRICES FOR EACH PRECEDING YEAR.

Year.	Raw commodities.		Manufactured commodities.		All commodities.	
	Relative price. ([a])	Per cent of increase in 1908 over each preceding year.	Relative price. ([a])	Per cent of increase in 1908 over each preceding year.	Relative price. ([a])	Per cent of increase in 1908 over each preceding year.
1890	115.0	9.1	112.3	8.8	112.9	8.8
1891	116.3	7.9	110.6	10.5	111.7	9.9
1892	107.9	16.3	105.6	15.7	106.1	15.7
1893	104.4	20.2	105.9	15.4	105.6	16.3
1894	93.2	34.7	96.8	26.2	96.1	27.8
1895	91.7	36.9	94.0	30.0	93.6	31.2
1896	84.0	49.4	91.9	33.0	90.4	35.8
1897	87.6	43.3	90.1	35.6	89.7	36.9
1898	94.0	33.5	93.3	31.0	93.4	31.5
1899	105.9	18.5	100.7	21.4	101.7	20.7
1900	111.9	12.2	110.2	10.9	110.5	11.1
1901	111.4	12.7	107.8	13.4	108.5	13.2
1902	122.4	2.5	110.6	10.5	112.9	8.8
1903	122.7	2.3	111.5	9.6	113.6	8.1
1904	119.7	4.8	111.3	9.8	113.0	8.7
1905	121.2	3.5	114.6	6.6	115.9	6.0
1906	126.5	[b].8	121.6	.5	122.5	.2
1907	133.4	[b]5.9	128.6	[b]5.0	129.5	[b]5.2
1908	125.5	....	122.2	....	122.8	....

[a] Average price for 1890-1899=100.0.

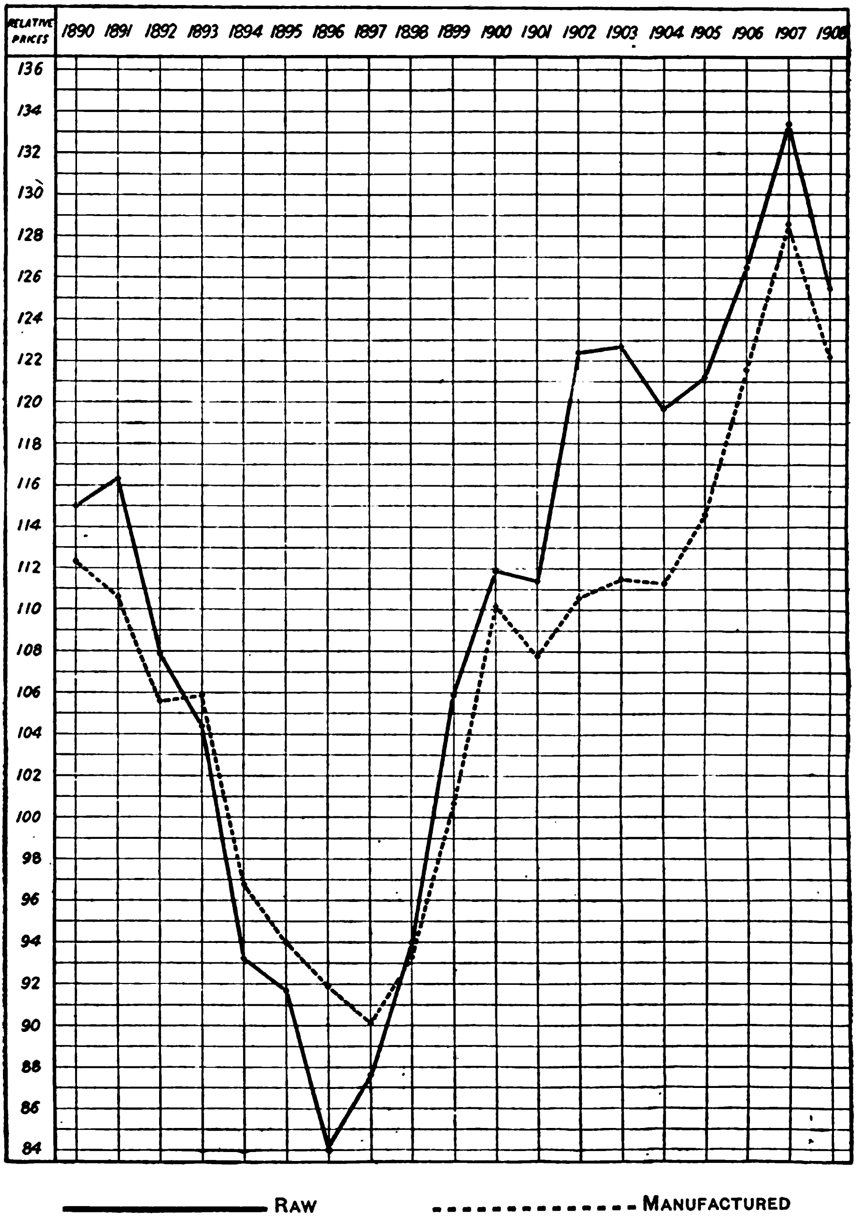
[b] Decrease.

In 1890, when prices in general were high, the relative prices of raw commodities were higher than those of manufactured commodities and remained so until 1893, when prices of raw commodities declined and those of manufactured commodities were slightly above the prices of 1892. From 1894 to 1896 there was a marked decline in both groups, the raw commodities being lower than the manufactured in each of these years. In 1897 raw commodities advanced and manufactured declined. From 1898 to 1900 there was a decided advance in both groups each year, raw commodities advancing to a higher point than manufactured. In 1901 there was a very slight decline in raw and a more marked decline in manufactured commodities. In 1902 both raw and manufactured commodities made a decided advance, raw commodities much the greater, and in 1903 both slightly advanced. In 1904 both raw and manufactured commodities declined slightly, but in 1905 both raw and manufactured commodities advanced. In 1906 both raw and manufactured commodities made a sharp advance, and another advance, equally great, was made in both groups in 1907, when both raw and manufactured commodities reached the highest point during the 19 years considered. In 1908 both raw and manufactured commodities declined.

For the 19 years included in this table, with the single exception of 1893, it will be seen that during the years of high prices raw commodities were higher than manufactured commodities, and during the years of low prices, with the exception of 1898, raw commodities were lower than manufactured commodities. This is clearly shown in the graphic table which follows:

RELATIVE PRICES OF RAW AND MANUFACTURED COMMODITIES 1890 TO 1908.

[Average price for 1890 to 1899=100.0.]



PRICES OF COMMODITIES, BY MONTHS, JANUARY, 1904, TO DECEMBER, 1908.

An opportunity is given below to study the movement in prices in each of the 9 groups before named, month by month for a few years back, in a table showing the relative prices in each group and for all commodities for each month from January, 1904, to December, 1908, inclusive:

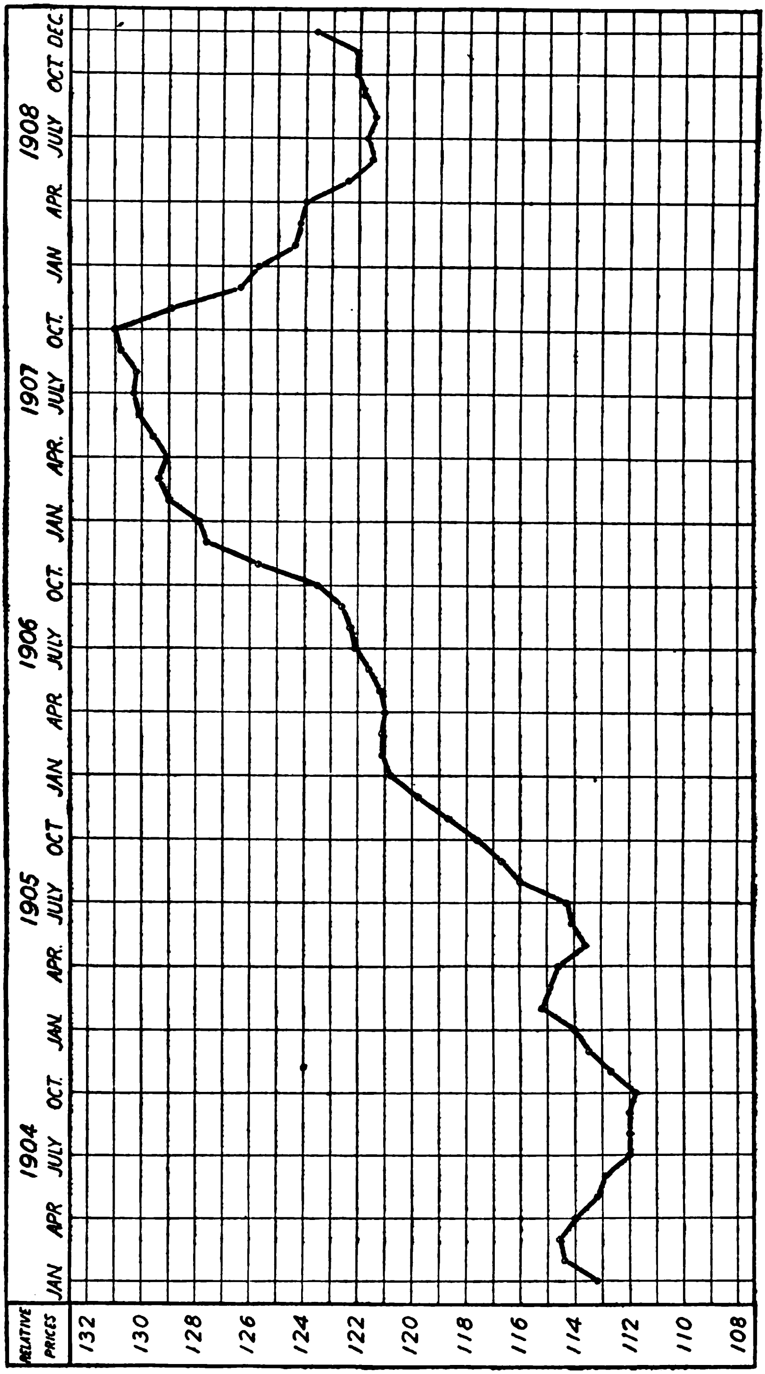
RELATIVE PRICES OF COMMODITIES FOR EACH MONTH, 1904 TO 1908, BY GROUPS.

[Average price for 1890-1899=100.0.]

Date.	Farm products.	Food, etc.	Cloths and clothing.	Fuel and lighting.	Metals and implements.	Lumber and building materials.	Drugs and chemicals.	House furnishing goods.	Miscellaneous.	All commodities.
1904.										
January	120.8	106.3	110.4	143.6	108.9	123.6	111.7	111.9	110.2	113.2
February	127.2	108.3	112.1	141.9	109.0	124.4	110.4	111.5	111.2	114.4
March	130.3	108.7	111.9	138.7	109.6	123.5	110.6	111.5	112.9	114.6
April	129.2	107.4	111.7	130.6	111.0	123.6	111.8	111.5	112.6	114.0
May	127.6	105.2	110.9	129.1	110.6	123.9	112.3	111.8	112.7	113.2
June	126.8	105.1	110.5	129.4	109.3	125.5	110.6	111.8	111.6	112.9
July	125.2	105.2	108.8	127.8	108.6	124.4	109.9	111.8	112.9	112.0
August	125.3	106.3	108.6	128.2	108.3	123.6	109.6	111.8	111.6	112.0
September	126.0	108.5	108.4	128.8	107.6	120.4	108.5	111.8	111.2	112.0
October	125.4	107.8	108.4	129.1	107.7	119.5	108.2	111.8	111.6	111.8
November	126.4	110.2	108.3	130.8	110.7	119.4	107.7	111.8	109.7	112.7
December	122.2	111.4	108.6	133.9	113.4	120.1	109.1	111.8	111.5	113.5
Average, 1904	126.2	107.2	109.8	132.6	109.6	122.7	110.0	111.7	111.7	113.0
1905.										
January	124.1	112.2	109.6	130.8	115.2	120.1	108.9	109.1	111.2	114.0
February	125.9	113.6	108.5	132.8	119.7	121.9	109.4	109.1	113.8	115.2
March	127.1	110.3	108.7	130.5	122.6	120.7	110.0	109.1	114.6	114.9
April	127.0	109.0	108.8	125.8	122.5	122.8	110.5	109.1	113.9	114.6
May	125.2	104.6	109.0	124.0	122.3	124.5	109.0	109.1	112.1	113.6
June	126.2	102.7	110.1	124.4	121.2	130.7	108.8	109.1	112.9	114.1
July	128.9	103.2	111.5	124.3	120.8	128.0	106.4	109.1	110.6	114.3
August	125.3	105.9	113.8	125.3	122.3	131.6	108.1	109.1	111.6	116.0
September	120.4	108.3	114.5	126.5	123.2	131.9	110.0	109.1	111.8	116.7
October	120.1	108.8	115.2	132.2	124.2	133.4	110.2	109.1	112.5	117.6
November	119.7	110.2	116.1	134.5	126.3	134.2	109.5	109.1	113.3	118.7
December	121.8	112.1	117.1	134.7	129.3	132.1	108.8	109.1	115.1	119.8
Average, 1905	124.2	108.7	112.0	128.8	122.5	127.7	109.1	109.1	112.8	115.9
1906.										
January	119.5	112.3	119.4	134.0	131.0	135.0	102.9	108.8	118.6	120.
February	118.7	112.2	119.5	131.3	131.6	138.4	101.5	108.8	118.9	121.
March	119.4	111.7	119.6	130.9	131.5	139.6	101.2	108.8	118.1	121.
April	122.5	111.0	119.3	131.7	131.3	139.2	101.0	108.8	117.6	121.
May	124.2	109.8	119.5	129.9	132.3	140.4	100.2	108.8	121.3	121.
June	126.2	111.1	119.4	128.6	133.2	139.8	100.3	108.8	122.2	121.
July	124.0	112.3	119.3	129.7	133.1	141.5	100.3	112.1	122.6	122.
August	122.8	113.2	119.3	131.3	133.2	139.9	101.6	112.1	123.0	122.3
September	123.8	112.4	119.7	131.9	135.4	141.0	100.9	112.1	121.4	122.6
October	125.2	112.7	120.3	132.2	139.3	141.1	100.7	112.7	120.3	123.5
November	126.9	115.8	121.6	134.5	143.6	141.6	100.7	115.0	123.4	125.7
December	130.0	118.2	122.2	136.5	146.9	143.3	102.9	115.0	125.8	127.6
Average, 1906	123.6	112.6	120.0	131.9	135.2	140.1	101.2	111.0	121.1	122.5

RELATIVE PRICES OF ALL COMMODITIES, BY MONTHS, 1904 TO 1908.

[Average price for 1890 to 1899=100.0.]



RELATIVE PRICES OF COMMODITIES FOR EACH MONTH, 1904 TO 1908, BY GROUPS—Concluded.

[Average price for 1890-1899=100.0.]

Date.	Farm products.	Food, etc.	Cloths and clothing.	Fuel and lighting.	Metals and implements.	Lumber and building materials.	Drugs and chemicals.	House furnishing goods.	Miscellaneous.	All commodities.
1907.										
January	129.0	117.0	123.2	135.8	147.9	145.9	102.1	115.0	126.0	127.9
February	134.6	118.2	123.9	136.6	149.1	147.3	103.5	115.0	123.8	129.0
March	135.4	116.7	124.6	135.5	148.8	149.1	103.4	117.2	128.5	129.4
April	136.5	113.9	125.3	132.1	148.6	150.5	105.0	117.5	128.9	129.1
May	139.9	113.8	125.9	132.6	148.8	150.4	104.8	117.5	129.5	129.6
June	144.2	115.2	126.9	131.2	148.1	149.8	104.4	118.5	128.8	130.1
July	140.5	114.9	128.0	132.9	146.9	149.2	108.1	119.6	130.3	130.3
August	141.0	115.3	128.3	134.1	142.7	149.0	119.1	120.5	127.5	130.2
September	145.5	117.4	129.2	135.2	140.8	147.2	119.1	120.5	127.8	130.8
October	144.4	123 5	128.8	139.9	135.4	144.9	116.7	120.5	129.5	131.0
November	128.9	122.8	128.2	139.9	133.3	142.2	115.8	120.2	124.3	128.9
December	128.3	120.8	127.1	133.6	129.8	137.2	112.4	120.2	120.6	126.4
Average, 1907	137.1	117.8	126.7	135.0	143.4	146.9	109.6	118.5	127.1	129.5
1908.										
January	129.8	120.5	124.0	134.3	127.4	138.9	109.5	117.0	122.6	125.7
February	128.8	119.8	121.2	132.5	126.7	138.1	111.1	117.0	121.4	124.4
March	134.2	120.2	119.9	132.9	125.9	135.2	110.9	117.0	120.1	124.2
April	135.0	121.3	118.5	128.5	125.9	135.9	110.2	117.0	120.6	124.0
May	134.9	118.2	117.6	127.8	125.8	131.6	107.1	117.0	121.9	122.4
June	132.8	120.3	114.7	129.0	124.8	128.8	108.4	114.5	121.1	121.5
July	134.0	120.2	114.5	129.2	124.0	128.8	112.7	114.1	121.5	121.7
August	133.8	120.0	114.4	130.2	124.5	129.9	112.1	111.2	118.9	121.4
September	132.7	121.9	114.2	130.4	124.7	130.4	111.2	111.2	118.5	121.8
October	133.9	122.6	114.2	130.7	124.8	131.1	109.7	111.2	118.2	122.1
November	133.5	121.9	114.8	131.9	125.1	132.3	110.2	110.5	116.7	122.1
December	135.2	124.4	115.6	132.5	125.7	136.3	110.9	110.5	117.1	123.6
Average, 1908	133.1	120.6	116.9	130.8	125.4	133.1	110.4	114.0	119.9	122.8

In this table the average relative prices of farm products are based on 16 articles from 1904 to 1907 and on 20 articles in 1908; of food, etc., on 53 articles from 1904 to 1907 and on 57 articles in 1908; of cloths and clothing, on 76 articles in 1904 and 1905, on 75 articles in 1906 and 1907, and on 66 articles in 1908; of fuel and lighting, on 13 articles; of metals and implements, on 38 articles; of lumber and building materials, on 27 articles from 1904 to 1907, and on 28 articles in 1908; of drugs and chemicals, on 9 articles; of house furnishing goods, on 14 articles, and of miscellaneous, on 13 articles. The average relative prices of all commodities are based on 259 articles in 1904 and 1905, and on 258 articles from 1906 to 1908.

The table shows that in the five-year period the group of farm products reached the lowest average in February, 1906, and the highest in September, 1907; that of food, etc., the lowest in June, 1905, and the highest in December, 1908; that of cloths and clothing, the lowest in November, 1904, and the highest in September, 1907; that of fuel and lighting, the lowest in May, 1905, and the highest in January, 1904; that of metals and implements, the lowest in September, 1904, and the highest in February, 1907; that of lumber and building materials, the lowest in November, 1904, and the highest in April, 1907; that of drugs and chemicals, the lowest in May, 1906, and the highest in August and September, 1907; that of house furnishing goods, the lowest, January to June, 1906, and the highest in August, September, and October, 1907; while in the miscellaneous group the lowest average was reached in November, 1904, and the highest in July, 1907. It is interesting to see that during the five years the relative price of no single group was as low as the base—that is, the average price for the ten-year period from 1890 to 1899. Farm products were from 18.7 per cent to 45.5 per cent above base (average price for the ten-year period, 1890 to 1899); food, etc., from 2.7 per cent to 24.4 per cent above base; cloths and clothing, from 8.3 per cent to 29.2 per cent above base; fuel and lighting, from 24 per cent to 43.6 per cent above base; metals and implements, from 7.6 per cent to 49.1 per cent above base; lumber and building materials, from 19.4 per cent to 50.5 per cent above base; drugs and chemicals, from 0.2 per cent to 19.1 per cent above base; house furnishing goods, from 8.8 per cent to 20.5 per cent above base; the miscellaneous group, from 9.7 per cent to 30.3 per cent above base; and all commodities combined, from 11.8 per cent to 31.0 per cent above base. All commodities combined reached the lowest average for these years in October, 1904, and the highest in October, 1907.

The course of prices, by months, during the years 1904 to 1908 as represented by all commodities is clearly shown in the graphic table on page 212.

The following table shows the movement in the wholesale prices of raw commodities and of manufactured commodities month by month from January, 1904, to December, 1908. A description of the two classes may be found on page 198.

RELATIVE PRICES OF RAW COMMODITIES, MANUFACTURED COMMODITIES, AND ALL COMMODITIES, FOR EACH MONTH, 1904 TO 1908.

[Average price for 1890-1899=100.0.]

Date.	Raw commodities.	Manufactured commodities.	All commodities.
1904.			
January	121.8	111.1	113.2
February	123.6	112.2	114.4
March	123.2	112.5	114.6
April	121.1	112.3	114.0
May	119.7	111.6	113.2
June	118.5	111.5	112.9
July	117.5	110.7	112.0
August	118.7	110.4	112.0
September	119.1	110.3	112.0
October	117.3	110.5	111.8
November	120.7	110.8	112.7
December	122.1	111.5	113.5
Average, 1904	119.7	111.3	113.0

RELATIVE PRICES OF RAW COMMODITIES, MANUFACTURED COMMODITIES, AND ALL COMMODITIES, FOR EACH MONTH, 1904 TO 1908—Concluded.

[Average price for 1890-1899=100.0.]

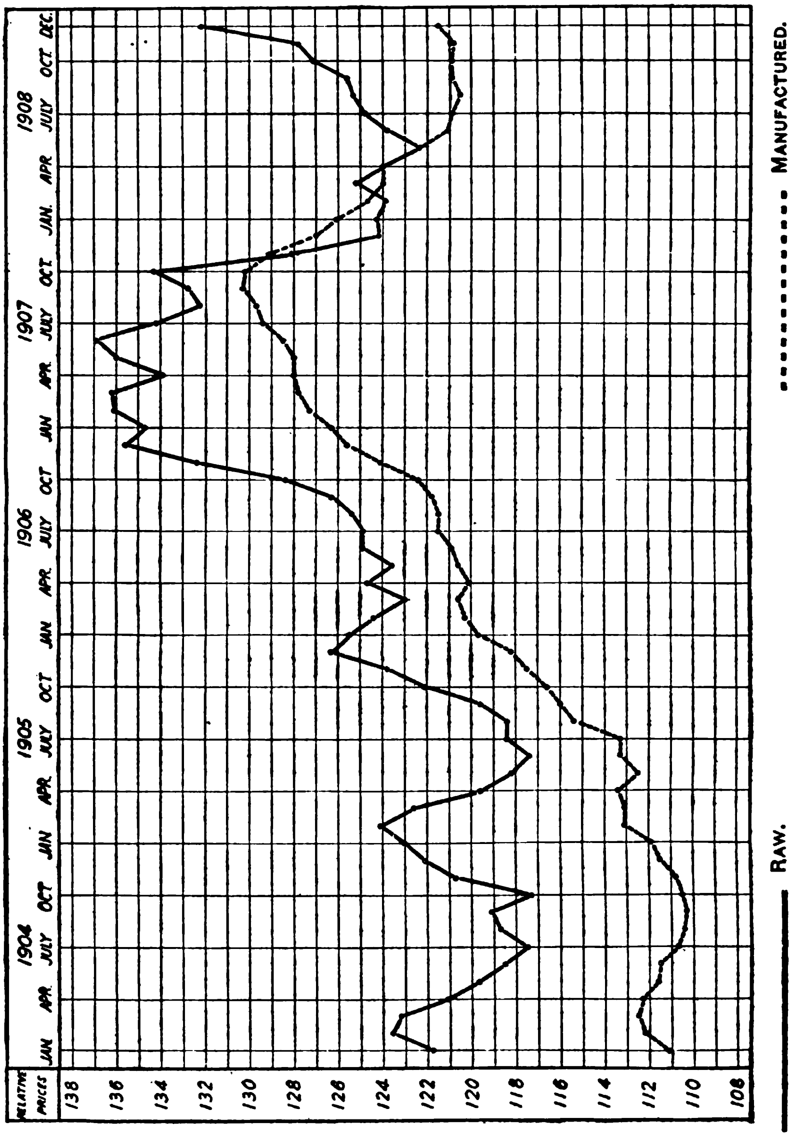
Date.	Raw commodities.	Manufactured commodities.	All commodities.
1905.			
January	123.0	111.9	114.0
February	124.1	113.1	115.2
March	122.6	113.1	114.9
April	119.6	113.4	114.6
May	118.2	112.5	113.6
June	117.4	113.3	114.1
July	118.4	113.3	114.3
August	118.4	115.4	116.0
September	119.6	116.0	116.7
October	122.1	116.6	117.6
November	123.8	117.5	118.7
December	126.3	118.2	119.8
Average, 1905	121.2	114.6	115.9
1906.			
January	125.5	119.7	120.8
February	124.4	120.3	121.1
March	123.0	120.6	121.1
April	124.7	120.1	121.0
May	123.6	120.6	121.2
June	124.9	120.9	121.6
July	124.9	121.5	122.1
August	125.4	121.5	122.3
September	126.3	121.8	122.6
October	128.4	122.4	123.5
November	132.4	124.1	125.7
December	135.6	125.6	127.6
Average, 1906	126.5	121.6	122.5
1907.			
January	134.7	126.3	127.9
February	136.1	127.3	129.0
March	136.2	127.8	129.4
April	133.9	128.0	129.1
May	136.0	128.0	129.6
June	136.9	128.5	130.1
July	134.2	129.4	130.3
August	132.3	129.7	130.2
September	132.8	130.3	130.8
October	134.3	130.2	131.0
November	128.1	129.1	128.9
December	124.2	127.0	126.4
Average, 1907	133.4	128.6	129.5
1908.			
January	124.3	126.1	125.7
February	123.9	124.7	124.4
March	125.2	124.0	124.2
April	124.0	124.0	124.0
May	122.4	122.4	122.4
June	123.8	121.1	121.5
July	124.8	120.9	121.7
August	125.3	120.5	121.4
September	125.6	120.9	121.8
October	127.1	120.9	122.1
November	127.8	120.8	122.1
December	132.2	121.5	123.6
Average, 1908	125.5	122.2	122.8

The price of raw commodities reached the lowest average for these years in October, 1904, and the highest in June, 1907; manufactured commodities reached the lowest point in September, 1904, and the highest in September, 1907. The average price for raw commodities ranged from 17.3 per cent to 36.9 per cent above the base, while the average for manufactured commodities ranged from 10.3 per cent to 30.3 per cent above the base price.

The course of prices of raw and manufactured commodities from 1904 to 1908 is shown, by months, in the graphic table which follows:

RELATIVE PRICES OF RAW AND MANUFACTURED COMMODITIES, BY MONTHS, 1904 TO 1908.

[Average price for 1890 to 1899=100.0.]



INFLUENCES AFFECTING PRICES.

No attempt has been made in any way to investigate the causes of the rise and fall of prices. The aim has been to give the prices as they actually prevailed in the market. The causes are too complex, the relative influence of each too uncertain, in some cases involving too many economic questions, to permit their discussion in connection with the present article. It will be sufficient to enumerate some of the influences that cause changes in prices. Such influences include variations in harvest, which not only contract or expand the supply and consequently tend to increase or decrease the price of a commodity, but also decrease or increase, to a greater or less degree, the purchasing power of such communities as are dependent in whole or in part upon such commodity; changes in demand due to changes in fashions, seasons, etc.; legislation altering internal-revenue taxes, import duties, or bounties; inspection as to purity or adulteration; use of other articles as substitutes—as, for instance, an advance in the price of beef will cause an increased consumption of pork and mutton and, it may be added, a probable increase in the price of both pork and mutton; improvements in methods of production which will tend to give either a better article for the same price or an equal article for a lower price; cheapening of transportation or handling; speculative manipulation of the supply or of the raw product; commercial panic or depression; expanding or contracting credit; overproduction; unusual demand owing to steady employment of consumers; short supply owing to disputes between labor and capital in industries of limited producing capacity, as in the anthracite coal industry in 1902; organization or combination of mills or producers, thus enabling, on the one hand, a greater or less control of prices or, on the other hand, economies in production or in transportation charges through the ability to supply the article from the point of production or manufacture nearest the purchaser. So far as individual commodities are concerned, no conclusion can safely be formed as to causes without an examination of the possible influence of several—in some cases, perhaps all—of these causes. For example, the various internal-revenue and tariff acts have, in a marked degree, no doubt affected the prices of proof spirits, of tobacco, and of sugar. But, on the other hand, they have not been alone in their influences, and it probably would not in all cases be accurate to give the change of tax or duty as representing the measure of a certain and definite influence on the prices of those commodities.

EXPLANATION OF TABLES.

The general statistical tables of this report are five in number, entitled as follows:

I.—Wholesale prices of commodities in 1908.

II.—Monthly actual and relative prices of commodities in 1908 and base prices (average for 1890-1899).

III.—Monthly relative prices of commodities in 1908.

IV.—Average yearly actual and relative prices of commodities, 1890 to 1908, and base prices (average for 1890–1899).

V.—Yearly relative prices of commodities, 1890 to 1908.

Table I.— Wholesale prices of commodities in 1908, pages 249 to 299.— This table shows in detail the actual prices in 1908, as obtained for the several commodities embraced by this report. There is not space within a bulletin article to republish in full the actual prices for all commodities from 1890 down to 1907. Such prices may be found, however, in preceding March Bulletins of this Bureau, as follows:

Prices from 1890 to 1901 in Bulletin No. 39.
Prices for 1902 in Bulletin No. 45.
Prices for 1903 in Bulletin No. 51.
Prices for 1904 in Bulletin No. 57.
Prices for 1905 in Bulletin No. 63.
Prices for 1906 in Bulletin No. 69.
Prices for 1907 in Bulletin No. 75.

It is important that the greatest care be exercised in the choice of commodities in order that a simple average of their relative prices shall show a general price level. In the present compilation 258 commodities are shown, and it has been the aim of the Bureau to select only important and representative articles in each group. The use of a large number of articles, carefully selected, minimizes the effect on the general price level of an unusual change in the price of any one article or of a few articles. It will be seen that more than one series of prices have been given in the case of articles of great importance. This has been done for the purpose of giving weight to these important commodities, no other method of accomplishing this having been found satisfactory by the Bureau. The same means have been employed by Mr. Sauerbeck in his English prices, as explained in Bulletin No. 39, and the approximate accuracy of the same, as an indication of the variation of prices, has been proved by various tests based on the amount of production, etc.

Various methods of weighting have been attempted in connection with compilations of relative prices. One method employed by European statisticians is to measure the importance of each commodity by its annual consumption by the entire nation, the annual consumption being found by adding to the home production the amount imported and subtracting the amount exported. The method employed by the Bureau of Labor in its publication of Retail Prices of Food in the Eighteenth Annual Report and in Bulletins 59, 65, 71, and 77, consisted in giving to the various articles of food an importance based upon their average consumption in normal families. While it was possible to determine the relative importance as far as the consumption of food is concerned, there are, of course, many commodities the importance of which can not be measured by this method. The impossibility of securing even approximately accurate figures for annual consumption in the United States of the commodities included in this compilation renders this method unavailable for the Bureau.

It has been thought best in the present series of index numbers, after a careful consideration of all methods of weighting, to use simply a large number of representative staple articles, selecting them in such a manner as to make them, to a large extent, weight themselves. Upon a casual examination it may seem that by this method a comparatively unimportant commodity—such, for instance, as tea—has been given the same weight or importance as one of the more important commodities, such as wheat. A closer examination, however, discloses the fact that tea enters into no other commodity under consideration, while wheat is not only quoted as the raw material, but enters into the two descriptions of wheat flour, the two descriptions of crackers, and the three descriptions of loaf bread.

In securing these prices an effort has been made to include staple commodities only. In a number of instances it was found possible to continue prices for the same commodities that were included in the Report on Wholesale Prices, Wages, and Transportation, submitted by Mr. Aldrich from the Senate Committee on Finance, March 3, 1893. Many articles which were included in that report are no longer manufactured, or, if still manufactured, have ceased to be important factors in the market. On the other hand, a number of articles not shown in that report have become of such importance as to render necessary their inclusion in any study of the course of prices.

Although in the case of commodities of great importance more than one series of quotations have been used, in no case has an article of a particular description been represented by more than one series of quotations from the same market. For this reason the terms "series of quotations" and "commodities" have been used interchangeably in this report.

In the record of prices for the nineteen years from 1890 to 1908, 237 series of quotations have been secured for the entire period and an additional 24 for some portion of the period. No quotations are shown for imported tin plate since 1898; none are shown for Ashton's salt since 1903; none are shown for beaver overcoatings since 1905; and none are shown for sun-dried apples, nutmegs, cotton and wool blankets, split boots, men's 84-needle hose, linen thread, all-wool chinchilla overcoatings, shawls, Atlantic brown sheetings, Hope bleached sheetings, and indigo 16-ounce suitings in 1908. Quotations for horses, mules, live poultry, tobacco, canned corn, canned peas, canned tomatoes, fresh beef (Chicago), dressed poultry, cabbage, and yellow-pine flooring are shown for the first time in 1908. In all there are 258 series of quotations for the year 1908.

Material changes in the description of 3 articles were made in 1902, of 2 articles in 1903, of 1 article in 1904, of 5 articles in 1905, of 7 articles in 1906, of 3 articles in 1907, and of 19 articles in 1908. For 7 of these articles the trade journals no longer supply satisfactory quotations, the manufacture of the particular grades of 10 previously quoted has been discontinued by the establishments heretofore furnishing quotations, and for 23 articles the substituted descriptions more nearly represent the present demands of the trade.

In making these substitutions, with few exceptions articles were supplied corresponding as closely as possible to those which were previously used.

The prices quoted in every instance are wholesale prices. Wholesale prices have invariably been used in compilations which have been made for the purpose of showing changes in the general price level of all commodities. They are more sensitive than retail prices and more quickly reflect changes in conditions, and, too, it is much more difficult to follow the changes in quality of commodities quoted in retail prices than in wholesale prices. Retail prices usually follow the wholesale, but not always in the same proportion. The margin between them in the case of some commodities is so great that slight changes in the wholesale price do not affect the retail price. Changes in the wholesale price, which last for a short time only, do not usually result in corresponding changes in the retail price.

The net cash prices are shown for textiles and all articles whose list prices are subject to large and varying discounts. In the case of a number of articles, such as white pine, nails, etc., however, whose prices are subject to a small discount for cash, no deduction has been made.

The prices have been collected from the best available sources, such as standard trade journals, officials of boards of trade, chambers of commerce, and produce exchanges, and leading manufacturers or their selling agents.

The prices quoted are usually the prices in the New York market, except for such articles as have their primary market in some other locality. For grains, live stock, etc., for example, Chicago prices are quoted; for fish, except salmon, Boston prices; for tar, Wilmington, N. C., prices; for Elgin creamery butter, Elgin, Ill., prices, etc. The prices for textiles are the prices in the general distributing markets, such as New York, Boston, and Philadelphia; and where no market is mentioned in the prefatory note to Table I it should be understood that the prices are for the general market.

The following table shows the different markets and the number of articles quoted for each market:

NUMBER OF COMMODITIES OR SERIES OF QUOTATIONS IN 1908, CLASSIFIED BY MARKETS FOR WHICH SECURED.

Market.	Farm products.	Food, etc.	Cloths and clothing.	Fuel and lighting.	Metals and implements.	Lumber and building materials.	Drugs and chemicals.	House-furnishing goods.	Miscellaneous.	Total.
New York	3	46	2	9	21	23	9	6	12	131
Chicago	15	6			1	1				23
Factory, mine, wells, etc				3	1	3		3		10
Pittsburg					7					7
Philadelphia					4					4
Boston		3								3
Trenton, N. J								3		3
Cincinnati				1	1					2
Eastern markets (Balt., Boston, N. Y., Phila.)			2							2
East St. Louis, Ill	1									1
Elgin, Ill		1								1
La Salle, Ill					1					1
Louisville, Ky	1									1
Peoria, Ill									1	1
Washington, D. C		1								1
Wilmington, N. C						1				1
General market			62		2			2		66
Total	20	57	66	13	38	28	9	14	13	258

As regards the description of the commodity it should be stated that the greatest care has been taken to secure prices throughout the period from 1890 to 1908 for a commodity of precisely the same description. Changes in quality are, of course, reflected in prices, and for this reason note has been made of any important changes which have occurred. In the case of certain commodities, such as butter, eggs, etc., prices for the best quality have been taken in order to avoid frequent changes in grade. It should also be stated in this connection that in the case of commodities for which prices were secured from the Oil, Paint, and Drug Reporter the lowest quotations were taken where a range of prices was found, because of the fact that in that publication these represent the prices of large lots, while the high quotations represent the prices of smaller lots.

Weekly quotations have been secured in the case of all articles which are subject to frequent fluctuations in price, such as butter, cheese, eggs, grain, live stock, meats, etc. In the case of articles whose prices are more stable, monthly or yearly quotations have been taken. The following table shows the number of series of weekly, monthly, and yearly price quotations:

NUMBER OF COMMODITIES OR SERIES OF QUOTATIONS, CLASSIFIED AS TO THEIR FREQUENCY OF QUOTATION IN 1908.

Frequency of quotation.	Farm products.	Food, etc.	Cloths and clothing.	Fuel and lighting.	Metals and implements.	Lumber and building materials.	Drugs and chemicals.	House-furnishing goods.	Miscellaneous.	Total.
Weekly	17	25	1	1					1	45
Monthly	3	32	61	12	38	28	9	14	12	209
Yearly			4							4
Total	20	57	66	13	38	28	9	14	13	258

The character of each series of quotations as regards frequency is shown in all cases in Table I in a prefatory note which states fully the date of the quotations and, if weekly, whether the quotations are for some particular day of the week, the average for the week, or the range for the week. The majority of the weekly quotations show the price on Tuesday, and if for any reason Tuesday's price was not obtainable the first price in the week has been taken. The quotations from trade and other journals, when credited to the first of each month, are not in all instances the price for the exact day stated, as it is a common practice of the daily papers which make a specialty of market reports to devote certain days to the review of the market of certain articles. For example, the Boston Herald quotes fish on Saturday only. The prices are, however, the earliest prices quoted in the journal to which the article is credited. It should also be stated that the monthly prices credited to weekly publications are the earliest quotations shown in such publications for each month.

In many localities the price of bread per loaf is not affected by changes in the price of flour, yet the weight of the loaf is changed from time to time. During 1904, with the advance in the price of flour, the weight of the loaf was decreased in some localities. For this reason the relative prices of bread are computed on the price per pound and not per loaf. Table I shows the price per loaf, the price per pound, and the weight each month during 1908.

The average price for the year was obtained by dividing the sum of the quotations for a given commodity by the number of quotations shown. For example, the sum of the Tuesday's prices of cotton for 1908 (shown on page 250) was $5.4405, and the number of quotations 52. The former figure divided by the latter gives $0.10463 as the average price for the year. When a range was shown the mean price for each date was found, and this was used in computing the yearly average as above described. The reader will understand that, in order to secure for any commodity a strictly scientific average price for the year, one must know the quantity marketed and the price for which each unit of quantity was sold. It is manifestly impossible to secure such detail, and even if it were possible the labor and cost involved in such a compilation would be almost prohibitive. It is believed that the method adopted here, which is also that used in the construction of other index numbers, secures results which are quite as valuable for all practical purposes.

Owing to the unusual method of fixing the scale of prices of cut and wire nails and the difficulties encountered in securing satisfactory quotations of prices, it was thought best to enter into a somewhat lengthy explanation in Bulletin No. 39, and the reader is referred to pages 226 to 231 of that number.

The base prices of nails are the prices quoted by the trade, and while, for reasons explained in Bulletin No. 39, they could not be used in computing relative prices, they form the basis from which are calculated the actual prices for 8-penny nails, as given in Table I, and therefore the base prices of both cut and wire nails during 1908 are given in the following tables:

NAILS: CUT, BASE SIZES, 1908.

[Price per 100-pound keg, f. o. b. Pittsburg, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$2.00-$2.05	Apr	$1.90-$1.95	July	$1.75	Oct	$1.75
Feb	2.00- 2.05	May	1.90- 1.95	Aug	$1.75-1.80	Nov	1.75
Mar	1.90- 1.95	June	1.85	Sept	1.75	Dec	1.75
						Average	$1.85

NAILS: WIRE, BASE SIZES, 1908.

[Price per 100-pound keg, f. o. b. Pittsburg, on the first of each month; quotations from the Iron Age.]

Jan	$2.05	Apr	$2.05	July	$1.95	Oct	$1.95
Feb	2.05	May	2.05	Aug	1.95	Nov	1.95
Mar	2.05	June	2.05	Sept	1.95	Dec	1.95
						Average	$2.00

In previous Bulletins quotations were published for two descriptions of scoured wool, but in view of the fact that a large proportion of wool is marketed unwashed, monthly price quotations for a standard grade of unwashed wool have also been secured. For purposes of comparison the quotations on the scoured basis are continued in Table I. No relative prices were computed from the quotations of unwashed wool. It may be necessary at some future time to use these quotations in the index number, and it was considered advisable to secure them from year to year.

The quotations of actual prices of unwashed wool on the first of each month for 1890 to 1903 were shown in Bulletin No. 51 (page 237); for 1904, in Bulletin No. 57 (page 405); for 1905, in Bulletin No. 63 (page 352); for 1906, in Bulletin No. 69 (page 264); and for 1907, in Bulletin No. 75 (page 311).

The prices for 1908 follow:

WHOLESALE PRICE OF UNWASHED OHIO MEDIUM FLEECE WOOL (ONE-FOURTH AND THREE-EIGHTHS GRADE), 1908.

[Price per pound in the eastern markets (Baltimore, Boston, New York, and Philadelphia) on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.31	Apr	$0.28	July	$0.23	Oct	$0.26
Feb	.30	May	.27	Aug	.25	Nov	.27
Mar	.29	June	.22	Sept	.26	Dec	.27
						Average	$0.2675

On preceding pages of this report an opportunity has been afforded to note the extent of the change in wholesale prices between 1907 and 1908, by groups of commodities. The following table shows the per cent of increase or decrease in the average wholesale price in 1908 for each individual article as compared with the price in 1907:

PER CENT OF INCREASE OR DECREASE IN THE AVERAGE WHOLESALE PRICES OF COMMODITIES IN 1908, COMPARED WITH 1907.

[For a more detailed description of the articles see page 249 et seq.]

Farm products, 20 articles.

Article.	Per cent of increase or decrease.
PRICE INCREASED.	
Flaxseed: No. 1	1.8
Rye: No. 2, cash	1.8
Cattle: steers, good to choice	3.2
Cattle: steers, choice to fancy	4.2
Wheat: regular grades, cash	9.1
Oats: contract grades, cash	13.2
Tobacco: Burley, dark red, good leaf	21.1
Corn: contract, cash	29.6
PRICE DECREASED.	
Barley: choice to fancy malting, by sample	4.3
PRICE DECREASED—concluded.	
Hogs: heavy	4.6
Poultry: live, fowls	5.8
Horses: draft, good to choice	7.1
Mules: 16 hands high, medium to good	7.2
Hides: green, salted, packers', heavy native steers	8.2
Hogs: light	9.4
Sheep: wethers, plain to choice	11.2
Cotton: upland, middling	11.9
Sheep: wethers, good to fancy	13.9
Hay: timothy, No. 1	27.2
Hops: New York State, prime to choice	31.7

Food, etc., 57 articles.

Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.	
Bread: crackers, oyster	....
Bread: crackers, soda	....
Bread: loaf, Washington market	....
PRICE INCREASED.	
Poultry: dressed, fowls, western, dry picked	0.4
Eggs: new-laid, fancy, near-by	.6
Fruit: prunes, California, 60's to 70's	.8
Vegetables, fresh: onions	1.0
Fruit: apples, evaporated, choice	2.4
Flour: rye	2.9
Bread: loaf, Vienna	3.3
Meat: beef, fresh, native sides (N. Y. market)	5.7
Sugar: granulated	6.2
Meat: beef, salt, hams, western	6.4
Bread: loaf, homemade	6.4
Vinegar: cider, Monarch	6.8
Flour: wheat, winter straights	7.6
Sugar: 96° centrifugal	8.3
Sugar: 89° fair refining	9.6
Flour: wheat, spring patents	11.1
Fruit: raisins, California, London layer	11.2
Fish: salmon, canned	15.2
Glucose	16.8
Rice: domestic, choice, head	16.9
Flour: buckwheat	18.0
Meal: corn, fine white	18.9
Meal: corn, fine yellow	18.9
Meat: beef, fresh, carcass, good native steers (Chicago market)	20.2
Vegetables, fresh: cabbage	26.0
PRICE INCREASED—concluded.	
Beans: medium, choice	30.5
Meat: beef, salt, extra mess	34.3
Vegetables, fresh: potatoes, white	44.9
PRICE DECREASED.	
Salt: American, medium	1.0
Lard: prime, contract	1.3
Meat: mutton, dressed	1.4
Fish: herring, large, Nova Scotia split	1.7
Milk: fresh	1.8
Butter: creamery, Elgin	2.5
Cheese: New York State, full cream	3.5
Starch: pure corn	4.2
Butter: creamery, extra	4.2
Coffee: Rio No. 7	4.6
Canned goods: corn, Republic No. 2	4.8
Meat: bacon, short rib sides	5.3
Meat: bacon, short clear sides	5.6
Fish: cod, dry, bank, large	5.7
Tea: Formosa, fine	7.3
Butter: dairy, New York State	8.3
Meat: pork, salt, mess, old to new	9.1
Tallow	11.3
Molasses: New Orleans, open kettle	13.2
Fruit: currants, Amalia's	13.4
Meat: hams, smoked, loose	13.7
Canned goods: peas, Republic No. 2	14.0
Canned goods: tomatoes, standard New Jersey No. 3	14.2
Soda: bicarbonate of, American	15.4
Fish: mackerel, salt, large No. 3s	18.4
Spices: pepper, Singapore	28.1

PER CENT OF INCREASE OR DECREASE IN THE AVERAGE WHOLESALE PRICES OF COMMODITIES IN 1908, COMPARED WITH 1907—Continued.

Cloths and clothing, 66 articles.

Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.	
Boots and shoes: men's vici calf shoes, Blucher bal., vici calf top, single sole	
Boots and shoes: men's vici kid shoes, Goodyear welt	
Linen shoe thread: 10s, Barbour	
Overcoatings: covert cloth	
Underwear: shirts and drawers, white, all wool	
Underwear: shirts and drawers, white, merino, full-fashioned, 60 per cent wool, etc	
Women's dress goods: Sicilian cloth	
Women's dress goods: Panama cloth	
PRICE INCREASED.	
Shirtings: bleached, Wamsutta <o> XX	1.7
Trouserings: fancy worsted	1.9
Women's dress goods: Poplar cloth	3.1
Sheetings: bleached, 9-4, Atlantic	3.2
PRICE DECREASED.	
Wool: Ohio, fine fleece (X and XX grade), scoured	.3
Leather: sole, oak, scoured backs, heavy No. 1	.6
Flannels: white, 4-4, Ballard Vale No. 3	.6
Broadcloths: first quality, black, 54-inch	.8
Cotton thread: J. & P. Coats	2.3
Women's dress goods: cashmere, 36-inch, Hamilton	2.5
Carpets: Wilton, 5-frame, Bigelow	2.8
Leather: chrome calf	3.0
Bags: 2-bushel, Amoskeag	3.0
Horse blankets: 6 pounds each	3.3
Boots and shoes: women's solid grain shoes	3.7
Blankets, cotton: 10-4, 2 pounds to the pair	3.8
Carpets: ingrain, 2-ply, Lowell	3.8
Carpets: Brussels, 5-frame, Bigelow	3.9
Suitings: clay worsted diagonal, 16-ounce	4.5
Suitings: clay worsted diagonal, 12-ounce	4.8
Blankets: 11-4, 5 pounds to the pair, all wool	5.0
PRICE DECREASED—concluded.	
Wool: Ohio, medium fleece (¼ and ⅜ grade), scoured	5.0
Leather: sole, hemlock	5.1
Worsted yarns: 2-40's, Australian fine	5.1
Suitings: serge, Washington Mills 6700	5.4
Women's dress goods: cashmere, cotton warp, Atlantic Mills F	5.7
Women's dress goods: cashmere, all wool, Atlantic Mills	5.8
Hosiery: women's cotton hose, seamless, fast black	5.9
Overcoatings: kersey	6.1
Leather: harness, oak	6.2
Hosiery: men's cotton half hose, seamless, fast black, 160 needles	6.3
Sheetings: brown, 4-4, Indian Head	6.7
Suitings: indigo blue, all wool, 14-ounce, Middlesex	7.9
Drillings: 30-inch, Stark A	8.2
Sheetings: bleached, 10-4, Wamsutta S. T	8.4
Sheetings: brown, 4-4, Pepperell R	8.5
Boots and shoes: men's brogans, split	10.8
Worsted yarns: 2-32's, crossbred stock, white	10.9
Overcoatings: chinchilla, cotton warp	11.5
Hosiery: women's cotton hose, high spliced heel, combed peeler yarn	12.4
Cotton flannels: 3½ yards to the pound	13.0
Calico: American standard prints, 64 x 64	13.8
Drillings: brown, Pepperell	14.4
Shirtings: bleached, 4-4, Lonsdale	14.8
Sheetings: bleached, 10-4, Pepperell	15.3
Denims: Amoskeag	16.0
Cotton flannels: 2¾ yards to the pound	16.1
Ginghams: Amoskeag	16.7
Ginghams: Lancaster	17.0
Tickings: Amoskeag A. C. A	18.1
Cotton yarns: northern, cones, 22/1	18.2
Shirtings: bleached, 4-4, Fruit of the Loom	18.3
Shirtings: bleached, 4-4, Williamsville A1	19.4
Cotton yarns: northern, cones, 10/1	19.4
Sheetings: brown, 4-4 Lawrence L. L	19.8
Silk: raw, Japan	23.1
Silk: raw, Italian	25.1
Print cloths: 28-inch, 64 x 64	29.5

Fuel and lighting, 13 articles.

Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.	
Coal: anthracite, chestnut	
Matches: parlor, domestic	
PRICE INCREASED.	
Coal: anthracite, stove	0.1
Petroleum: refined, 150° fire test, water white	.3
Petroleum: crude, Pennsylvania	2.6
Coal: bituminous, Pittsburg (Youghiogheny), lump	3.3
Petroleum: refined, for export	5.5
PRICE DECREASED.	
Coal: anthracite, egg	0.1
Coal: anthracite, broken	.1
Candles: adamantine	1.4
Coal: bituminous, Georges Creek (f. o. b. New York Harbor)	4.9
Coal: bituminous, Georges Creek (at the mine)	6.2
Coke: Connellsville, furnace	39.5

PER CENT OF INCREASE OR DECREASE IN THE AVERAGE WHOLESALE PRICES OF COMMODITIES IN 1908, COMPARED WITH 1907—Continued.

Metals and implements, 38 articles.

Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.	
Augers: extra, 1-inch	
Axes: M. C. O., Yankee	
Butts: loose pin, wrought steel, 3½ by 3½ inches	
Hammers: Maydole No. 1½	
Planes: Bailey No. 5, jack plane	
Saws: crosscut, Disston No. 2	
Saws: hand, Disston No. 7	
Steel rails	
Trowels: M. C. O	
Vises: solid box, 50-pound	
PRICE INCREASED.	
Quicksilver	12.4
PRICE DECREASED.	
Shovels: Ames No. 2	.2
Barb wire: galvanized	.5
Nails: wire, 8-penny, fence and common	.8
Steel sheets: black, No. 27	4.0
Files: 8-inch mill bastard	4.3
PRICE DECREASED—concluded.	
Tin plates: domestic	4.9
Nails: cut, 8-penny, fence and common	9.8
Steel billets	10.1
Doorknobs: steel, bronze plated	11.1
Zinc: sheet	14.0
Chisels: extra, socket firmer	15.5
Bar iron: common to best refined, from mill	16.6
Locks: common mortise	17.0
Wood screws: 1-inch	18.0
Silver: bar, fine	18.9
Bar iron: best refined, from store	19.4
Spelter: western	23.0
Lead: pig	23.6
Tin: pig	24.1
Pig iron: Bessemer	25.3
Pig iron: foundry No. 1	25.9
Lead pipe	29.3
Pig iron: gray forge, southern	31.5
Pig iron: foundry No. 2	31.9
Copper: ingot, electrolytic	35.8
Copper: sheet, hot-rolled	35.8
Copper wire: bare	36.8

Lumber and building materials, 28 articles.

Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.	
Cement: Rosendale	
Pine: yellow, siding, long leaf	
Putty: bulk	
PRICE INCREASED.	
Oak: white, quartered	0.2
Poplar	.4
Linseed oil: raw	.8
Pine: yellow, flooring, B, heart face	8.0
Lime: common	10.1
PRICE DECREASED.	
Pine: white, boards, uppers	1.0
Maple: hard	1.9
Pine: white, boards, No. 2 barn	2.8
Doors: western white pine	3.7
PRICE DECREASED—concluded.	
Oxide of zinc	4.7
Hemlock	6.2
Carbonate of lead: American	6.7
Oak: white, plain	10.7
Cement: Portland, domestic	11.3
Spruce	13.4
Window glass: American, single, firsts	16.1
Window glass: American, single, thirds	16.1
Shingles: cypress	16.3
Brick: common domestic	17.1
Plate glass: polished, glazing, 5 to 10 square feet	19.1
Plate glass: polished, glazing, 3 to 5 square feet	24.7
Rosin: common to good, strained	25.0
Shingles: red cedar	25.4
Turpentine: spirits of	28.6
Tar	31.3

Drugs and chemicals, 9 articles.

Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.	
Alum: lump	
Muriatic acid	
PRICE INCREASED.	
Brimstone: crude	1.4
Sulphuric acid	2.0
Alcohol: grain	4.5
PRICE INCREASED—concluded.	
Alcohol: wood, refined	7.1
Glycerin: refined	7.9
PRICE DECREASED.	
Opium: natural, in cases	4.7
Quinine: American	11.7

PER CENT OF INCREASE OR DECREASE IN THE AVERAGE WHOLESALE PRICES OF COMMODITIES IN 1908, COMPARED WITH 1907—Concluded.

House furnishing goods, 14 articles.

Article.	Per cent of increase or decrease.	Article.	Per cent of increase or decrease.
PRICE SAME AS IN 1907.		PRICE DECREASED.	
Earthenware: plates, white granite	....	Furniture: bedroom sets, hard wood	2.2
Earthenware: teacups and saucers, white granite	....	Earthenware: plates, cream-colored	2.5
Furniture: tables, kitchen	....	Furniture: chairs, bedroom, maple	5.8
PRICE INCREASED.		Table cutlery: carvers	6.3
Wooden ware: tubs, oak-grained	3.1	Glassware: pitchers, common	8.3
Furniture: chairs, kitchen	3.6	Glassware: tumblers	11.7
Wooden ware: pails, oak-grained	6.6	Glassware: nappies	12.9
		Table cutlery: knives and forks	16.5

Miscellaneous, 13 articles.

PRICE SAME AS IN 1907.		PRICE DECREASED.	
Tobacco: plug	....	Paper: news, wood	0.4
Tobacco: smoking, granulated, Seal of North Carolina	....	Paper: wrapping, manila	1.2
PRICE INCREASED.		Malt: western made	9.9
Cotton-seed meal	2.4	Cotton-seed oil: summer yellow, prime	16.0
Proof spirits	3.3	Rubber: Para Island, new	18.1
Soap: castile, mottled, pure	4.3	Rope: manila	21.3
Starch: laundry	7.2	Jute: raw	23.9

The most striking decreases in the average prices for 1908 as compared with 1907 in the group of farm products were for hops, hay, sheep, and cotton. The most important articles showing increased prices were corn, cattle, tobacco, oats, and wheat.

The articles showing the greatest increase in price in food were potatoes, fresh beef, beans, cabbage, flour, meal, rice, and sugar, while the articles showing the greatest decrease were pepper, mackerel, pork, canned peas, canned tomatoes, and molasses. In the group of cloths and clothing there was a decrease of from 10.8 to 29.5 per cent in 22 articles, including most of the cotton products, while only 4 articles showed an increase.

The principal decrease in the price of fuel and lighting was in coke. In metals and implements, there was a marked decrease in the prices of copper, pig iron, lead, bar iron, spelter, pig tin, and silver, with an increase in price of only one article, quicksilver.

In the lumber and building materials group there was a marked decline in the price of tar, turpentine, rosin, glass, shingles, and brick, but an increase in the price of lime and 4 other articles.

In the group of drugs and chemicals there was a decrease in the price of quinine and an increase in the price of glycerin and alcohol.

In the group of house furnishing goods there was a decrease in the price of table cutlery and glassware.

In the miscellaneous group the principal decrease in price was in jute, rope, rubber, and cotton-seed oil, and a slight advance in the price of starch, soap, and proof spirits.

Table II.—Monthly actual and relative prices of commodities in 1908 and base prices (average for 1890–1899), pages 300 to 324.—This table shows for each article the monthly price, which is either the average price for the month or the price on some day of the month. On the line below the December price is given the average price for the year, and on the line above the January price is given the average price during the 10 years from 1890 to 1899, which average price is designated the base price.

The monthly prices for such articles as are quoted weekly in Table I were found by dividing the sum of the quotations in each month as shown in Table I by the number of quotations in each month, except for articles in which a range is quoted, for which articles the average is computed from the mean of the weekly prices. In Table I single quotations for 1908 are shown for 4 articles. The price of two of these is maintained throughout the year, and the prices of two are averages for the year. For each of these four articles the annual price has been shown in Table II as the price during each month.

It was impossible to secure quotations during all of the months of the year for 9 of the 258 articles, viz, horses, wheat, dairy butter, buckwheat flour, raisins, cabbage, onions, Atlantic bleached sheetings, and tar.

The average price for 1908 was obtained, as has already been explained, by dividing the sum of the quotations for the year as shown in Table I by the number of quotations for the year. The average price for the 10-year period, 1890 to 1899, was obtained by dividing the sum of the average prices of the 10 years by 10. This average price for 10 years has been adopted as the base for all relative prices. For the 10 articles which do not show prices for the entire period of 10 years, 1890 to 1899, the base in each case is the average of the years prior to and including 1899.

For the 11 articles quoted in 1908 for the first time, no monthly or yearly relative price could be computed for each individual article because the average for the base period of 10 years was not secured. These articles have been given due weight in the subgroups and general groups to which they belong. See discussion of Table III, p. 231.

In explanation of the term base or standard, as used in connection with relative prices or index numbers, it may be stated that in reducing a series of actual prices to relative prices a base must first be chosen, and this may be either a single quotation, the average price for 1 year, or the average for 2 or more years. If the price for a single year is chosen, it is essential that that year be a normal one, for if prices are high in the year chosen for the base any subsequent fall will be unduly emphasized, while, on the other hand, if prices are low any subsequent rise will be emphasized. For the reason that all the commodities probably never present a normal condition as regards prices in any one year, it was decided that an average price for a number of years would better reflect average or approximately normal conditions and form a more satisfactory base than would the price for any single year. A base made up of an average of a number of years will include or neutralize the effects alike of speculation and of depression. The period chosen as this base was that from 1890 to 1899—a period of 10 years. The average price of each article for the base period was found, as previously stated, by adding together the average yearly prices of that article for all of the 10 years and dividing by 10.

The relative prices as shown in this and other tables have been calculated in the usual manner and represent simply the percentage which each monthly or yearly price is of the base price. The average price for the first 10 years of the period, that is, the base, always represents 100, and the percentages for each month or year enable the reader to measure readily the rise and fall, from month to month or from year to year, of the prices of each single commodity, of any group of commodities, or of all the 258 commodities involved. These commodities are arranged in alphabetical order under each of the nine general groups, as in Table I.

In order that the method pursued may be more readily understood, the reader is referred to the table itself, as given on pages 300 to 324. Taking up the first commodity shown, barley, we find that the average price per bushel for the base period, 1890 to 1899, inclusive, was 45.34 cents; the average price for January, 1908, was 99.60 cents; that for February was 89.38 cents; that for March 89.13 cents, etc. The relative price for the base period, as heretofore explained, is always placed at 100, and is so given in the table. The relative price for January, 1908, is shown to be 219.7, or 119.7 per cent higher than the base or average for the 10 years. In February the relative price was 197.1, or 97.1 per cent above the base, etc.

The relative price for the year 1908 was 161.8, or 61.8 per cent above the base. The figures in each case were secured according to the method already explained, that for January, 1908, being expressed as follows:

Average price for base period (1890–1899)	$0.4534
Average price for January, 1908	$0.9960
Relative price for base period (1890–1899)	100.0
Relative price for January, 1908	219.7

The remainder of the table may be analyzed in a similar manner.

The value of prices given in this relative form, it will readily be seen, consists in the means afforded for tracing and measuring the changes from month to month, from year to year, or from period to period, and in the combination of prices of a sufficient number of commodities to show the general price level. It must not be assumed that a system of relative prices of representative commodities will enable one to trace the causes of changes in the general price level or to determine the effect of such changes on any class of consumers or on all consumers. The use of such a system is to show the general course of prices from time to time of one commodity, of a group of commodities, or of all commodities.

It is stated on page 220 that certain articles are no longer quoted and other articles of the same class are substituted.

An explanation of the method of computing the relative price of these articles is necessary, and harness leather will be used as an illustration. It must be understood that during the years when "country middles" were quoted, they were assumed to represent the several grades of oak harness leather—that is, that the course of prices of a standard grade of oak harness leather in an index number of prices fairly represents the course of prices of the various grades of oak harness leather. Therefore, when it became necessary to substitute, in 1902, "packers' hides" for the "country middles," prices were secured for packers' hides for both 1901 and 1902, and it was found that the average price for the year 1902 was the same, or 100 per cent of the average price for the year 1901. The relative price of country middles in 1901, as shown in Table IV, was 114.7 (average price for the ten years, 1890 to 1899, equals 100), and if country middles represented oak harness leather at that time, and packers' hides represented the class in 1902, harness leather (shown by the price of packers' hides) remained the same price in 1902 as in 1901, and the relative price in 1902 was therefore 100 per cent of 114.7, the relative price in 1901, which gives 114.7 as the relative price in 1902. The same method was followed in computing relative prices for each month. The average price of harness leather in 1908 was 93.85 per cent of the average price in 1907; therefore the relative price in 1908 was 93.85 per cent of 129.0, the relative price of 1907, which gives 121.1 as the relative price in 1908. The same method of computing the relative prices was followed for sheep, crackers, herring, blankets, boots and shoes, calico, hosiery, leather, sheetings, women's dress goods, worsted yarns, augers, bar iron, butts, copper, vises, doors, plate glass, white pine, shingles, bedroom sets, and jute. For trouserings and underwear the exact grade quoted for 1903 was not manufactured in 1902. The manufacturer of trouserings, however, estimated that one-half of the advance in price over the price for the grade quoted for previous years was due to the fact that it was a better article and the other half to the advance in price of material and cost of manufacture. The advance was $0.1125 per yard over the price in 1902; one-half of this,

$0.05625, was added to the 1902 price of the 22 to 23 ounce trouserings to secure a theoretical 1902 price for the 21 to 22 ounce trouserings, and the 1903 relative price was then computed as above. Underwear was arbitrarily given the same relative price in 1903 as in 1902, as the all-wool underwear manufactured by the same firm showed no change in price. The 1908 relative prices of trouserings and underwear were found in the same way as explained above for harness leather.

Table III.— Monthly relative prices of commodities in 1908, pages 325 to 337.—This table repeats the relative monthly price for each article as given in Table II. In addition, similar commodities have been grouped for convenience in comparison, and averages computed for each subgroup and for each of the nine general groups.

Owing to the fact that in 1908 11 articles are quoted for the first time, that quotations of 11 are discontinued, and that 19 articles are substituted for similar articles formerly quoted, it has not been deemed advisable to compute the averages for groups and subgroups for 1908 upon the simple average basis as heretofore.

The method used in this report is as follows: The actual price for each month in 1908 was divided by the average price for the year 1907, giving a percentage based on 1907. These percentages for the several commodities of a group were added for each month and the sum divided by the number of commodities, giving an average percentage for the group for each month based on 1907. The relative price for the group for the year 1907, as determined in the report for that year, was then multiplied by the average percentage for the group for each month, producing as the product the relative price for the group for each month. The same process was used in computing the relative price for the year 1908. In applying this method to a group to which new articles were added in 1908, it was necessary to secure prices for both 1907 and 1908 for the additional articles.

For example, during the years when 16 articles were quoted in farm products, they were assumed to represent farm products; that is, the course of prices of these 16 articles in an index number of prices was assumed to fairly represent the course of prices for all farm products. Since it was considered advisable to secure prices for 4 additional articles belonging in this group, it became necessary to include these additional prices in computing the average for the group. This table shows under farm products average relative prices for grain, for cattle, for hogs, for sheep, and for all live stock quoted. An average is then given for farm products as a general group. The prices for horses and mules were included in the average relative price of live stock in 1908 by using the method explained above; also the four commodities, horses, mules, poultry, and tobacco, were included in the general group average for farm products by this method. Relative prices can not be shown separately for horses, mules, poultry, and tobacco, because the prices from 1890 to 1899, the common base for all articles, were not secured.

As explained in the discussion of Table II it was impossible to secure quotations during all of the months of the year for 9 of the 258 articles. In order of arrangement these are: Horses, wheat, dairy butter, buckwheat flour, raisins, cabbage, onions, sheetings, bleached, 9-4, Atlantic, and tar. In presenting monthly relative prices for these articles a nominal relative price (which is the same as the relative price for the month in which the article was last quoted) has been entered in this table for the months for which no price quotation is shown in Table I. This nominal price enters into the average for the subgroup, the general group, and "all commodities" for that month.

In the following table the December, 1908, relative price is compared with the average for 1890 to 1899. The average price for 1890 to 1899 is in every case the base, or 100 per cent. Only the commodities are included below for which the quotations throughout the 19-year period have been for practically the same description of article. In using this table it must be borne in mind that the comparison is between the prices for December, 1908, and the average prices for the base period.

RELATIVE PRICES, DECEMBER, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899.

[For a more detailed description of the articles see Table I, page 249 et seq. Average price for 1890-1899=100.0.]

Farm products, 14 articles.

Article.	Relative price, December, 1908.	Article.	Relative price, December, 1908.
PRICE INCREASED.		PRICE INCREASED—concluded.	
Hay: timothy, No. 1	115.0	Rye: No. 2, cash	143.3
Cotton: upland, middling	119.2	Corn: contract, cash	155.4
Hogs: light	123.7	Hides: green, salted, packers', heavy native steers	170.8
Flaxseed: No. 1	126.2	Oats: contract grades, cash	184.3
Hogs: heavy	131.6	PRICE DECREASED.	
Cattle: steers, good to choice	133.6	Hops: New York State, primo to choice	76.2
Cattle: steers, choice to fancy	138.2		
Barley: choice to fancy malting, by sample	139.2		
Wheat: regular grades, cash	140.8		

Food products, 47 articles.

PRICE INCREASED.		PRICE INCREASED—continued.	
Starch: pure corn	100.4	Fish: salmon, canned	123.9
Bread: loaf (Washington market)	100.6	Bread: loaf, homemade (New York market)	126.2
Meat: hams, smoked	105.7	Flour: wheat, spring patents	127.8
Rice: domestic, choice, head	109.3	Fish: cod, dry, bank, large	129.8
Vegetables, fresh: onions	110.3	Tallow	130.6
Molasses: New Orleans, open kettle	111.1	Vegetables, fresh: potatoes, white	134.7
Bread: loaf, Vienna (New York market)	117.3	Flour: buckwheat	135.1
Flour: wheat, winter straights	118.6	Meat: bacon, short rib sides	137.0
Meat: beef, fresh, native sides (New York market)	119.3	Beans: medium, choice	137.7
Salt: American, medium	120.7	Butter: creamery, extra (New York market)	139.8
Vinegar: cider, Monarch	121.8		

RELATIVE PRICES, DECEMBER, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899—Continued.

[Average price for 1890-1899=100.0.]

Food products, 47 articles—Concluded.

Article.	Relative price, December, 1908.	Article.	Relative price, December, 1908.
PRICE INCREASED—concluded.		PRICE DECREASED.	
Meat: bacon, short clear sides	140.3	**Sugar:** 96° centrifugal	97.6
Butter: creamery, Elgin	141.7	**Meat:** mutton, dressed	96.8
Cheese: New York State, full cream	141.8	**Sugar:** 89° fair refining	96.5
Meat: pork, salt, mess, old to new	142.7	**Sugar:** granulated	96.0
Butter: dairy, New York State	143.8	**Bread:** crackers, soda	90.5
Lard: prime, contract	146.9	**Fruit:** apples, evaporated, choice	90.1
Meat: beef, salt, hams, western	150.3	**Spices:** pepper, Singapore	84.2
Flour: rye	152.2	**Fruit:** prunes, California, 60s to 70s	72.7
Milk: fresh	156.9	**Tea:** Formosa, fine	72.2
Fruit: currants, Amalia's	158.4	**Fish:** mackerel, salt, large No. 3s	70.8
Meal: corn, fine white	159.7	**Coffee:** Rio No. 7	50.0
Meal: corn, fine yellow	164.7	**Soda:** bicarbonate of, American	47.8
Meat: beef, salt, extra mess	165.3		
Eggs: new-laid, fancy, near-by	223.1		

Cloths and clothing, 44 articles.

PRICE INCREASED.		PRICE INCREASED—concluded.	
Silk: raw, Japan	102.0	**Suitings:** indigo blue, all wool, 14-ounce, Middlesex	119.0
Linen shoe thread: 10s, Barbour	102.1	**Shirtings:** bleached, 4-4, Fruit of the Loom	120.2
Shirtings: bleached, 4-4, Williamsville A1	102.7	**Flannel:** white, 4-4, Ballard Vale No. 3	120.9
Ginghams: Amoskeag	103.2	**Print cloths:** 28-inch, 64 by 64	121.1
Cotton yarns: northern, cones, 22/1	104.1	**Boots and shoes:** men's brogans, split	121.3
Cotton yarns: northern, cones, 10/1	105.7	**Drillings:** brown, Pepperell	122.4
Silk: raw, Italian	105.8	**Worsted yarns:** 2-40s, Australian fine	122.8
Tickings: Amoskeag A. C. A	106.0	**Sheetings:** brown, 4-4, Indian Head	123.8
Cotton flannels: 2¾ yards to pound	106.2	**Boots and shoes:** women's solid grain shoes	125.4
Shirtings: bleached, 4-4, Wamsutta <o> XX	108.1	**Cotton thread:** J. & P. Coats	126.4
Boots and shoes: men's vici kid, Goodyear welt	108.7	**Horse blankets:** 6 pounds each	126.5
Wool: Ohio, medium fleece (¼ and ⅜ grade), scoured	109.6	**Sheetings:** bleached, 10-4, Pepperell	127.4
Carpets: ingrain, 2-ply, Lowell	111.1	**Leather:** sole, hemlock	131.5
Denims: Amoskeag	112.5	**Bags:** 2-bushel, Amoskeag	132.2
Cotton flannels: 3½ yards to pound	113.0	**Drillings:** 30-inch, Stark A	132.6
Blankets: 11-4, 5 pounds to pair, all wool	113.1	**Wool:** Ohio, fine fleece (X and XX grade), scoured	134.8
Broadcloths: first quality, black, 54-inch	114.3	**Women's dress goods:** cashmere, cotton warp, Atlantic Mills F	138.6
Underwear: shirts and drawers, white, all wool, etc	115.8	PRICE DECREASED.	
Shirtings: bleached, 4-4, Lonsdale	116.9	**Overcoatings:** Covert cloth, light weight, staple goods	96.9
Carpets: Brussels, 5-frame, Bigelow	117.5	**Ginghams:** Lancaster	96.0
Leather: sole, oak, scoured backs, heavy No. 1	117.5	**Sheetings:** bleached, 10-4, Wamsutta S. T.	89.0
Sheetings: brown, 4-4, Pepperell R	118.0	**Overcoatings:** chinchilla	87.0
Carpets: Wilton, 5-frame, Bigelow	118.5		

Fuel and lighting, 13 articles.

PRICE INCREASED.		PRICE INCREASED—concluded.	
Coal: bituminous, Georges Creek (f.o.b. New York Harbor)	113.0	**Petroleum:** refined, 150° fire test, water white	151.7
Coke: Connellsville, furnace	117.8	**Coal:** bituminous, Georges Creek (at the mine)	163.2
Coal: anthracite, broken	124.7	**Petroleum:** crude, Pennsylvania	195.6
Coal: anthracite, stove	130.4	PRICE DECREASED.	
Petroleum: refined, for export	131.0	**Candles:** adamantine	92.7
Coal: bituminous, Pittsburg (Youghiogheny), lump	132.2	**Matches:** parlor, domestic	85.4
Coal: anthracite, chestnut	137.6		
Coal: anthracite, egg	137.7		

RELATIVE PRICES, DECEMBER, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899—Continued.

[Average price for 1890-1899=100.0.]

Metals and implements, 31 articles.

Article.	Relative price, December, 1908.	Article.	Relative price, December, 1908.
PRICE SAME AS BASE.		PRICE INCREASED—concluded.	
Saws: crosscut, Disston No. 2	....	Zinc: sheet	121.3
Trowels, M. C. O., brick	....	Pig iron: foundry No. 2	125.6
		Pig iron: Bessemer	126.3
PRICE INCREASED.		Hammers: Maydole No. 1½	129.0
		Pig iron: gray forge, southern	135.3
Bar iron: best refined, from store	101.2	Axes: M. C. O., Yankee	144.9
Nails: cut, 8-penny, fence and common	101.2	Tin: pig	160.1
Saws: hand, Disston No. 7	101.3	Chisels: extra, socket firmer	198.0
Barb wire: galvanized	102.1	Locks: common mortise	203.2
Steel rails	107.4	Doorknobs: steel, bronze plated	235.7
Copper wire: bare	107.6		
Files: 8-inch mill bastard	110.2	PRICE. DECREASED.	
Quicksilver	111.7		
Lead: pig	113.9	Lead pipe	99.6
Copper: sheet, hot-rolled	114.5	Shovels: Ames No. 2	96.9
Spelter: western	114.8	Nails: wire, 8-penny, fence and common	94.8
Planes: Bailey No. 5, jack plane	115.7	Wood screws: 1 inch	66.2
Steel billets	116.1	Silver: bar, fine	66.0
Pig iron: foundry No. 1	119.9		

Lumber and building materials, 20 articles.

PRICE INCREASED.		PRICE INCREASED—concluded.	
Linseed oil: raw	105.8	Oak: white, quartered	152.8
Cement: Rosendale	107.1	Tar	157.7
Brick: common domestic	110.1	Spruce	163.8
Window glass: American, single, thirds	112.1	Pine: yellow, siding, long leaf	165.2
Carbonate of lead: American	114.7	Hemlock	167.2
Maple: hard	117.0	Poplar	186.5
Shingles: cypress	118.7	Rosin: common to good, strained	225.7
Window glass: American, single, firsts	119.0		
Lime: common	125.4	PRICE DECREASED.	
Oak: white, plain	126.9		
Oxide of zinc	128.3	Putty: bulk	75.9
Turpentine: spirits of	128.6		

Drugs and chemicals, 9 articles.

PRICE INCREASED.		PRICE DECREASED.	
Alum: lump	104.2	Quinine: American	61.0
Brimstone: crude	106.3	Alcohol: wood, refined	49.3
Sulphuric acid	112.4		
Glycerin: refined	117.9		
Alcohol: grain	118.3		
Muriatic acid	129.8		
Opium: natural, in cases	171.6		

House furnishing goods, 13 articles.

PRICE INCREASED.		PRICE DECREASED.	
Earthenware: plates, white granite	102.4	Earthenware: teacups and saucers, white granite	98.8
Earthenware: plates, cream-colored	104.0	Glassware: nappies	98.2
Wooden ware: tubs, oak-grained	122.5	Table cutlery: carvers	93.8
Furniture: tables, kitchen	124.7	Table cutlery: knives and forks	82.5
Furniture: chairs, bedroom, maple	145.3	Glassware: pitchers	71.5
Furniture: chairs, kitchen	156.8	Glassware: tumblers	67.6
Wooden ware: pails, oak-grained	161.7		

RELATIVE PRICES, DECEMBER, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899—Concluded.

[Average price for 1890-1899=100.0.]

Miscellaneous, 12 articles.

Article.	Relative price, December, 1908.	Article.	Relative price, December, 1908.
PRICE INCREASED.		PRICE DECREASED.	
Malt: western made	104.6	Rope: manila	95.1
Tobacco: smoking, granulated	117.9	Paper: wrapping, manila	85.9
Tobacco: plug	118.6	Paper: news, wood	69.6
Proof spirits	119.1		
Soap: castile, mottled, pure	123.0		
Cotton-seed oil: summer yellow, prime	125.7		
Starch: laundry	129.3		
Cotton-seed meal	134.8		
Rubber: Para Island, new	148.0		

Of the farm products group, 13 of the 14 articles were higher in December, 1908, than the average price for 1890 to 1899, and the price of only 1 article was lower in December, 1908, than the average for 1890 to 1899. The December, 1908, price, compared with the average price for 1890 to 1899, shows oats 84.3 per cent above; hides, 70.8 per cent above; corn, 55.4 per cent above, etc. Of the food group in December, 1908, eggs were 123.1 per cent above; mess beef 65.3 per cent above; yellow meal, 64.7 per cent above; lard, 46.9 per cent above; dairy butter, 43.8 per cent above, etc. With these illustrations the reader is referred to the table.

The facts presented in the foregoing table are summarized in the following table, which shows the changes in prices of articles in each group, classified by per cent of change:

CHANGES IN PRICES OF ARTICLES IN EACH GROUP, CLASSIFIED BY PER CENT OF CHANGE, DECEMBER, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899.

Group.	Number of articles.	Number of articles for which price—									
		Increased—					Was same as base.	Decreased—			
		100 per cent and more.	50 and under 100 per cent.	25 and under 50 per cent.	10 and under 25 per cent.	Less than 10 per cent.		Less than 10 per cent.	10 and under 25 per cent.	25 and under 50 per cent.	50 per cent and more.
Farm products	14	.....	3	7	3	.....	.....	.....	1	.....	.....
Food, etc	47	1	7	15	8	4	.....	6	1	3	2
Cloths and clothing	44	.....	.....	9	19	12	.....	2	2	.....	.....
Fuel and lighting	13	.....	3	5	3	.....	.....	1	1	.....	.....
Metals and implements	31	2	2	5	9	6	2	3	.....	2	.....
Lumber and building materials	20	1	6	4	6	2	.....	.....	1	.....	.....
Drugs and chemicals	9	.....	1	1	3	2	.....	.....	.....	1	1
House furnishing goods	13	.....	2	1	2	2	.....	3	1	2	.....
Miscellaneous	12	.....	.....	4	4	1	.....	1	1	1	.....
Total	203	4	24	51	57	29	2	16	8	9	3

It is seen in the above comparison of the prices of December, 1908, with the average for 1890 to 1899, that of the 14 articles in the farm products group, 13 show an increase and 1 a decrease; of the 47 in the foods, etc., group, 35 show an increase and 12 a decrease; of the 44 in the cloths and clothing group, 40 show an increase and 4 a decrease; of the 13 in the fuel and lighting group, 11 show an increase and 2 a decrease; of the 31 in the metals and implements group, 24 show an increase, 2 show the same price as the average for the base period, and 5 show a decrease; of the 20 in the lumber and building materials group, 19 show an increase and 1 a decrease; of the 9 in the drugs and chemicals group, 7 show an increase and 2 a decrease; of the 13 in the house furnishing goods group, 7 show an increase and 6 a decrease; of the 12 in the miscellaneous group, 9 show an increase and 3 a decrease. Of the 203 commodities included in the above table, 165 show an increase, 2 show the same price as the average for the base period, and 36 show a decrease. Of the 165 commodities that showed an increase in December, 1908, over the average for 1890 to 1899, 29 advanced less than 10 per cent, 57 advanced 10 and under 25 per cent, 51 advanced 25 and under 50 per cent, 24 advanced 50 and under 100 per cent, and 4 advanced 100 per cent and more. Of the 36 commodities which showed a decrease, 16 decreased less than 10 per cent, 8 decreased 10 and under 25 per cent, 9 decreased 25 and under 50 per cent, and 3 decreased 50 per cent and more.

The number and per cent of articles which showed each specified increase or decrease are given in the following table:

NUMBER AND PER CENT OF ARTICLES, BY CLASSIFIED PER CENT OF INCREASE OR DECREASE, DECEMBER, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899.

	Number of articles.	Per cent of articles.		Number of articles.	Per cent of articles.
Price increased:			Price decreased:		
100 per cent and more	4	2.0	Less than 10 per cent	16	7.9
50 and under 100 per cent	24	11.8	10 and under 25 per cent	8	3.9
25 and under 50 per cent	51	25.1	25 and under 50 per cent	9	4.4
10 and under 25 per cent	57	28.1	50 per cent and more	3	1.5
Less than 10 per cent	29	14.3	Total	36	17.7
Total	165	81.3	Grand total	203	100.0
Price same as base	2	1.0			

Of the 203 articles included in this table, it is seen that 165, or 81.3 per cent, show an increase in price; 2 articles, or 1 per cent, show the same price as the average for the base period; and 36 articles, or 17.7 per cent, show a decrease in price in December, 1908, as compared with the average price for the base period.

Of the 258 commodities considered in the Bureau's compilation of prices, the average price of 142 commodities was lower in December, 1908, than in December, 1907, the average price of 50 was the same in December, 1908, as in December, 1907, and the average price of 63 was higher in December, 1908, than in December, 1907. For two articles there were no quotations in December, 1907, and no quotation for one article in December, 1908.

The following table shows the relative prices of certain related articles, so grouped as to render easy a comparison of the course of their prices during the year 1908:

RELATIVE PRICES OF CERTAIN GROUPS OF RELATED ARTICLES IN 1908.

[Average price for 1890-1899=100.0.]

Month.	Cattle and cattle products.						Dairy products.		
	Cattle.	Beef, fresh.	Beef, hams.	Beef, mess.	Tallow.	Hides.	Milk.	Butter.	Cheese.
Jan	111.2	117.0	141.0	133.3	126.4	119.1	156.9	140.0	159.6
Feb	110.3	117.0	141.0	130.2	120.7	110.7	147.1	145.9	159.6
Mar	123.9	119.6	145.9	140.3	119.1	100.7	137.3	134.6	159.6
Apr	129.8	135.4	149.2	162.2	124.4	112.1	122.7	130.5	150.1
May	131.4	139.1	149.2	171.5	124.4	125.4	102.7	108.6	146.9
June	142.0	142.3	153.1	177.0	123.7	141.4	88.2	107.0	128.2
July	134.3	139.4	160.3	182.8	126.0	160.1	98.0	102.5	113.4
Aug	128.7	128.3	160.3	184.0	124.6	166.8	117.6	107.2	117.5
Sept	125.6	126.2	165.8	184.0	129.4	168.1	122.7	109.0	122.6
Oct	122.6	128.1	165.8	176.5	137.9	167.0	147.1	124.2	126.6
Nov	129.7	129.0	156.5	165.3	133.6	168.7	150.2	133.9	132.7
Dec	135.9	133.7	150.3	165.3	130.6	170.8	156.9	141.8	141.8
1908	127.4	129.5	153.2	164.5	126.7	142.6	129.0	122.1	138.2

Month.	Hogs and hog products.					Sheep and sheep products.		
	Hogs.	Bacon.	Hams, smoked.	Mess pork.	Lard.	Sheep.	Mutton.	Wool.
Jan	99.7	116.3	101.3	127.9	124.5	117.2	117.8	118.3
Feb	97.8	106.4	97.2	121.4	115.4	120.8	122.7	116.7
Mar	112.3	110.6	99.6	125.7	123.2	139.5	143.9	116.7
Apr	130.7	116.8	108.5	128.9	129.4	135.9	150.0	116.7
May	124.2	117.9	109.3	128.9	131.7	119.9	136.7	115.1
June	131.8	125.7	118.7	134.3	137.0	105.5	123.3	115.1
July	148.8	142.2	131.8	151.0	146.5	96.9	107.8	118.5
Aug	150.9	147.3	131.2	149.4	147.6	97.2	105.3	118.5
Sept	159.6	161.2	129.5	148.5	159.0	93.5	87.5	120.1
Oct	136.0	159.5	126.4	145.6	152.9	100.6	92.8	120.1
Nov	132.0	153.5	114.0	140.8	148.8	99.2	89.5	121.9
Dec	127.7	138.7	105.7	142.7	146.9	106.2	96.8	121.9
1908	129.5	133.1	114.3	137.3	138.8	111.0	114.5	118.3

Month.	Corn, etc.			Flaxseed, etc.		Rye and rye flour.		Wheat and wheat flour.		Flour, etc.		
	Corn.	Glucose.	Meal.	Flaxseed.	Linseed oil.	Rye.	Rye flour.	Wheat.	Wheat flour.	Wheat flour.	Crackers.	Loaf bread.
Jan	156.3	174.9	142.9	104.2	97.0	158.9	154.5	131.7	124.3	124.3	112.1	114.5
Feb	152.0	177.7	142.9	102.6	97.0	155.1	152.2	123.8	118.9	118.9	112.1	114.5
Mar	167.1	177.7	145.3	102.9	94.8	151.9	152.2	126.8	119.9	119.9	112.1	114.5
Apr	175.4	177.7	155.0	101.5	94.8	148.2	146.2	124.6	115.0	115.0	112.1	114.5
May	196.2	174.9	145.3	104.7	92.6	154.0	144.7	135.8	118.8	118.8	112.1	114.5
June	184.4	174.9	159.8	108.7	97.0	147.4	147.0	127.6	115.4	115.4	112.1	114.5
July	196.2	174.9	157.4	106.2	97.0	143.7	141.7	120.6	114.7	114.7	112.1	114.5
Aug	206.4	189.0	162.3	110.3	97.0	147.1	130.4	130.3	116.8	116.8	112.1	114.5
Sept	209.3	203.1	171.9	110.5	97.0	143.9	135.7	132.7	118.1	118.1	112.1	114.5
Oct	193.4	203.1	164.7	106.9	94.8	141.9	131.9	135.2	118.6	118.6	112.1	114.5
Nov	167.7	203.1	167.1	110.9	92.6	141.6	125.1	138.8	121.2	121.2	112.1	114.5
Dec	155.4	203.1	162.3	126.2	105.8	143.3	152.2	140.8	123.2	123.2	112.1	114.5
1908	179.9	186.2	156.4	108.0	96.5	148.0	142.8	131.8	118.8	118.8	112.1	114.5

RELATIVE PRICES OF CERTAIN GROUPS OF RELATED ARTICLES IN 1908—Concluded.

[Average price for 1890-1899 = 100.0.]

Month.	Cotton and cotton goods.									
	Cotton: upland, middling.	Bags: 2-bushel, Amoskeag.	Calico: American standard prints.	Cotton flannels.	Cotton thread.	Cotton yarns.	Denims.	Drillings.	Ginghams.	Hosiery.
Jan.......	150.4	139.4	133.7	128.9	145.4	121.9	119.7	137.3	115.3	89.5
Feb.......	149.1	150.1	114.6	128.9	145.4	115.9	119.7	139.0	110.8	89.5
Mar.......	142.0	132.2	114.6	125.0	129.6	117.6	119.7	134.9	113.1	89.5
Apr.......	129.6	132.2	114.6	125.0	129.6	105.6	114.9	127.2	113.1	89.5
May.......	141.2	132.2	114.6	121.0	129.6	106.0	114.9	130.8	113.1	89.5
June......	140.3	132.2	90.6	121.0	129.6	103.1	105.4	127.7	90.6	89.5
July......	144.9	132.2	90.6	117.1	129.6	103.7	105.4	129.9	90.6	89.5
Aug.......	133.8	132.2	95.5	117.1	129.6	107.6	105.4	128.2	90.6	89.5
Sept......	120.1	132.2	95.5	113.6	129.6	105.6	105.4	127.9	90.6	89.5
Oct.......	118.7	132.2	95.5	113.6	129.6	106.2	105.4	128.8	90.6	89.5
Nov.......	121.3	132.2	95.5	109.6	126.4	107.1	105.4	128.2	99.6	89.5
Dec.......	119.2	132.2	95.5	109.6	126.4	105.0	112.5	127.5	99.6	89.5
1908.....	134.8	134.3	104.3	119.2	131.7	108.8	111.1	130.6	101.5	89.5

Month.	Cotton and cotton goods.				Wool and woolen goods.					
	Print cloths.	Sheetings.	Shirtings.	Tickings.	Wool.	Blankets (all wool).	Broadcloths.	Carpets.	Flannels.	Horse blankets.
Jan.......	145.3	137.9	144.9	113.1	118.3	113.1	116.6	123.2	124.4	126.5
Feb.......	133.9	129.9	128.8	113.1	116.7	113.1	116.6	123.2	124.4	126.5
Mar.......	122.2	127.7	128.8	113.1	116.7	113.1	116.6	123.2	124.4	126.5
Apr.......	114.5	124.8	128.8	113.1	116.7	113.1	116.6	123.2	124.4	126.5
May.......	112.8	122.7	125.1	113.1	115.1	113.1	116.6	117.4	124.4	126.5
June......	114.5	117.8	110.0	99.0	115.1	113.1	116.6	117.4	120.9	126.5
July......	114.5	117.4	111.6	99.0	118.5	113.1	116.6	117.4	120.9	126.5
Aug.......	108.4	113.4	111.6	99.0	118.5	113.1	114.3	117.4	120.9	126.5
Sept......	105.7	112.9	111.6	99.0	120.1	113.1	114.3	117.4	120.9	126.5
Oct.......	108.4	112.3	111.6	99.0	120.1	113.1	114.3	115.7	120.9	126.5
Nov.......	116.7	111.5	112.4	106.0	121.9	113.1	114.3	115.7	120.9	126.5
Dec.......	121.1	113.2	114.0	106.0	121.9	113.1	114.3	115.7	120.9	126.5
1908.....	118.0	120.0	120.0	106.0	118.3	113.1	115.6	118.9	122.4	126.5

Month.	Wool and woolen goods.					Hides, leather, and boots and shoes.			Petroleum.	
	Overcoatings (all wool).	Suitings.	Underwear (all wool).	Women's dress goods (all wool).	Worsted yarns.	Hides.	Leather.	Boots and shoes.	Crude.	Refined.
Jan.......	122.6	131.4	115.8	127.0	125.2	119.1	123.2	121.9	195.6	143.6
Feb.......	122.6	131.4	115.8	127.0	124.2	110.7	120.2	120.6	195.6	143.6
Mar.......	122.6	131.4	115.8	127.0	122.7	100.7	119.8	119.3	195.6	143.6
Apr.......	122.6	131.4	115.8	127.0	117.0	112.1	118.9	119.3	195.6	143.6
May.......	122.6	131.4	115.8	127.0	117.0	125.4	116.8	119.1	195.6	143.6
June......	122.6	131.4	115.8	127.0	113.2	141.4	116.8	119.7	195.6	143.6
July......	122.6	123.2	115.8	127.0	114.2	160.1	116.8	120.5	195.6	143.6
Aug.......	122.6	123.2	115.8	127.0	114.2	166.8	119.0	121.1	195.6	143.6
Sept......	122.6	123.2	115.8	127.0	114.2	168.1	119.0	121.9	195.6	143.6
Oct.......	122.6	123.2	115.8	127.0	114.2	167.0	120.2	123.3	195.6	141.5
Nov.......	122.6	124.5	115.8	127.0	115.6	168.7	120.2	124.7	195.6	141.5
Dec.......	122.6	125.6	115.8	127.0	119.9	170.8	122.3	124.7	195.6	141.5
1908.....	122.6	127.6	115.8	127.0	117.6	142.6	119.4	121.3	195.6	143.1

The lowest monthly relative price during 1908 for cattle was 110.3 in February, the highest 142.0 in June; the lowest for fresh beef was 117.0 in January and February, the highest 142.3 in June; the lowest for beef hams was 141.0 in January and February, the highest 165.8 in September and October; the lowest for mess beef was 130.2 in February, the highest 184.0 in August and September; the lowest for tallow was 119.1 in March, the highest 137.9 in October; the lowest for hides was 100.7 in March, the highest 170.8 in December. The facts for the other groups may be seen by reference to the table.

Table IV.—Average yearly actual and relative prices of commodities, 1890 to 1908, and base prices (average for 1890–1899), pages 338 to 364.—This table shows for each commodity the average price for each of the 19 years from 1890 to 1908. In the parallel column following is given the relative price for each year—that is, the per cent that the price in each year is of the average price for the 10 years from 1890 to 1899. In the line above the prices for 1890 are given the average prices for the 10-year period taken as the basis of comparison.

The average price for each year was obtained, as has been explained on page 222, by dividing the sum of the quotations for each year as shown in Table I by the number of quotations for each year: The average price for the 10-year period (1890 to 1899) was obtained by dividing the sum of the average prices of the 10 years by 10. The relative prices for each year were computed in the same way as for each month, as explained in the discussion of Table II. The 11 articles quoted in 1908 for the first time do not appear in Table IV.

Table V.—Yearly relative prices of commodities, 1890 to 1908, pages 365 to 382.—In this table similar commodities have been grouped and the average relative prices have been computed for the various subgroups and each of the 9 general groups. The relative prices of articles in Table IV are included in this table. Relative prices can not be given for the articles quoted for the first time in 1908, since prices for the base period, 1890–1899, were not secured, but these articles enter into the averages for the groups within which they fall. The relative prices from 1890 to 1907 for the groups are simple averages, found by dividing the sum of the relative prices of the several commodities in the group by the number of commodities.

For 1908 the averages for all the groups were computed by the method explained on page 231 in the description of Table III.

The average relative price of each of the 9 general groups for each year of the period and the average relative price of all commodities for each year are shown on page 207.

The average relative prices of the 237 commodities for which quotations were secured for the entire period involved do not differ materially from the average relative price of all commodities shown in a preceding table based on the varying number of commodities in the different years. Eliminating the commodities for which quotations were secured for only a portion of the period, we find that the average relative price of the 237 commodities remaining was 122.3 in 1908, as against 122.8, the relative price for the 258 articles for which wholesale prices were secured in this investigation.

The following table shows for each of the 9 general groups the relative prices of 1908 compared with the average for 1890 to 1899.

There are included in this table only those commodities which have retained practically the same description throughout the 19-year period. The average price for 1890 to 1899 is in every case the base, or 100 per cent. It should be kept in mind in using the table that the comparison is between the average prices for 1908 and the average prices for the base period.

RELATIVE PRICES, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899.

[For a more detailed description of the articles see Table I, page 249 et seq. Average price for 1890-1899=100.0.]

Farm products, 14 articles.

Article.	Relative price, 1908.	Article.	Relative price, 1908.
PRICE INCREASED.		PRICE INCREASED—concluded.	
Flaxseed: No. 1	108.0	Rye: No. 2, cash	148.0
Hay: timothy, No. 1	118.3	Barley: choice to fancy malting, by sample	161.8
Cattle: steers, good to choice	126.7	Corn: contract, cash	179.9
Hogs: light	127.5	Oats: contract grades, cash	189.5
Cattle: steers, choice to fancy	128.1	PRICE DECREASED.	
Hogs: heavy	131.4	Hops: New York State, prime to choice	67.1
Wheat: regular grades, cash	131.8		
Cotton: upland, middling	134.8		
Hides: green, salted, packers', heavy native steers	142.6		

Food products, 48 articles.

PRICE INCREASED.		PRICE INCREASED—concluded.	
Bread: loaf (Washington market)	100.6	Fish: salmon, canned	130.4
Fruit: apples, evaporated, choice	101.9	Fish: cod, dry, bank, large	130.7
Vegetables, fresh: onions	104.0	Meat: bacon, short rib sides	132.6
Sugar: granulated	104.5	Meat: bacon, short clear sides	133.5
Starch: pure corn	104.9	Meat: pork, salt, mess, old to new	137.3
Sugar: 89° fair refining	104.9	Cheese: New York State, full cream	138.2
Sugar: 96° centrifugal	105.0	Lard: prime, contract	138.8
Rice: domestic, choice, head	111.2	Beans: medium, choice	138.9
Salt: American, medium	111.5	Eggs: new-laid, fancy, near-by	142.0
Flour: wheat, winter straights	111.6	Vegetables, fresh: potatoes, white	142.6
Molasses: New Orleans, open kettle	112.7	Flour: rye	142.8
Meat: hams, smoked, loose	114.3	Meat: beef, salt, hams, western	153.2
Meat: mutton, dressed	114.5	Meal: corn, fine white	154.0
Bread: loaf, Vienna (New York market)	117.3	Flour: buckwheat	156.1
Fruit: raisins, California, London layer	120.6	Meal: corn, fine yellow	158.8
Butter: creamery, extra (New York market)	120.9	Fruit: currants, Amalia's	162.4
Butter: dairy, New York State	121.0	Meat: beef, salt, extra mess	164.5
Meat: beef, fresh, native sides (New York market)	121.1	PRICE DECREASED.	
Butter: creamery, Elgin	124.1	Spices: pepper, Singapore	95.5
Vinegar: cider, Monarch	124.6	Bread: crackers, soda	90.5
Flour: wheat, spring patents	126.1	Fish: salt, mackerel, large No. 3s	80.4
Bread: loaf, homemade (New York market)	126.2	Fruit: prunes, California, 60s to 70s	77.3
		Tea: Formosa, fine	75.1
Tallow	126.7	Soda: bicarbonate of, American	52.6
Milk: fresh	129.0	Coffee: Rio No. 7	47.8

RELATIVE PRICES, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899—Continued.

[Average price for 1890-1899=100.0]

Cloths and clothing, 44 articles.

Article.	Relative price, 1908.
PRICE SAME AS BASE.	
Ginghams: Lancaster	
PRICE INCREASED.	
Linen shoe thread: 10s, Barbour	102.1
Ginghams: Amoskeag	102.8
Tickings: Amoskeag A. C. A	106.0
Cotton yarns: northern, cones, 22/1	106.9
Shirtings: bleached, 4-4, Williamsville A1	107.1
Wool: Ohio, medium fleece, ¼ and ⅜ grade, scoured	107.3
Boots and shoes: men's vici kid shoes, Goodyear welt	108.7
Cotton yarns: northern, cones, 10/1	110.5
Denims: Amoskeag	111.1
Leather: sole, oak, scoured backs, heavy No. 1	113.0
Blankets: 11-4, 5 pounds to pair, all wool.	113.1
Boots and shoes: men's brogans, split	114.8
Broadcloths: first quality, black, 54-inch.	115.6
Underwear: shirts and drawers, white, all wool	115.8
Carpets: ingrain, 2-ply, Lowell	116.6
Cotton flannels: 2¾ yards to pound	117.4
Print cloths: 28-inch, 64 by 64	118.0
Shirtings: bleached, Wamsutta <o> XX	118.0
Boots and shoes: women's solid grain shoes	118.5
PRICE INCREASED—concluded.	
Suitings: indigo blue, all wool, 14-ounce, Middlesex	119.0
Carpets: Brussels, 5-frame, Bigelow	119.9
Shirtings: bleached, 4-4, Lonsdale	120.1
Carpets: Wilton, 5-frame, Bigelow	120.2
Worsted yarns: 2-40s, Australian fine	120.8
Cotton flannels: 3½ yards to pound	121.0
Flannels: white, 4-4, Ballard Vale No. 3.	122.4
Drillings: brown, Pepperell	123.4
Sheetings: brown, 4-4, Pepperell R	124.0
Sheetings: brown, 4-4, Indian Head	124.4
Shirtings: bleached, 4-4, Fruit of the Loom	125.4
Horse blankets: 6 pounds each	126.5
Leather: sole, hemlock	129.3
Sheetings: bleached, 10-4, Pepperell	129.6
Wool: Ohio, fine fleece, X and XX grade, scoured	129.6
Cotton thread: J. & P. Coats	131.7
Bags: 2-bushel, Amoskeag	134.3
Drillings: 30-inch, Stark A	137.8
Women's dress goods: cashmere, cotton warp, Atlantic Mills F	138.6
PRICE DECREASED.	
Silk: raw, Italian	98.2
Overcoatings: covert cloth	96.9
Silk: raw, Japan	96.8
Sheetings: bleached, 10-4, Wamsutta S.T.	94.7
Overcoatings: chinchilla	89.0

Fuel and lighting, 13 articles.

Article.	Relative price, 1908.
PRICE INCREASED.	
Coke: Connellsville, furnace	100.6
Coal: bituminous, Georges Creek (f. o. b. New York Harbor)	112.3
Coal; anthracite, broken	124.8
Coal: anthracite, stove	127.1
Coal: bituminous, Pittsburg (Youghiogheny), lump	132.3
Petroleum: refined, for export	133.9
Coal: anthracite, chestnut	134.1
Coal: anthracite, egg	134.1
PRICE INCREASED—concluded.	
Petroleum, refined, 150° fire test, water white	151.7
Coal: bituminous, Georges Creek (at the mine)	162.2
Petroleum: crude, Pennsylvania	195.6
PRICE DECREASED.	
Candles: adamantine	93.5
Matches: parlor, domestic	85.4

Metals and implements, 31 articles.

Article.	Relative price, 1908.
PRICE SAME AS BASE.	
Saws: crosscut, Disston No. 2	
Trowels: M. C. O., brick	
PRICE INCREASED.	
Saws: hand, Disston No. 7	101.3
Bar iron: best refined, from store	103.7
Barb wire: galvanized	103.8
Copper wire: bare	103.8
Spelter: western	105.1
Nails: cut, 8-penny, fence and common.	106.7
Steel rails	107.4
Copper: sheet, hot-rolled	108.0
Quicksilver	109.1
Lead: pig	110.8
Files: 8-inch mill bastard	111.9
Planes: Bailey No. 5, jack plane	115.7
Pig iron: foundry No. 1	119.6
Zinc: sheet	121.3
PRICE INCREASED—concluded.	
Steel billets	122.2
Pig iron: Bessemer	123.9
Pig iron: foundry No. 2	124.5
Hammers: Maydole No. 1½	129.0
Pig iron: gray forge, southern	129.6
Axes: M. C. O., Yankee	144.9
Tin: pig	160.2
Chisels: extra, socket firmer	198.0
Locks: common, mortise	203.2
Doorknobs: steel, bronze plated	235.7
PRICE DECREASED.	
Shovels: Ames No. 2	99.4
Lead pipe	98.4
Nails: wire, 8-penny, fence and common.	97.1
Silver: bar, fine	71.4
Wood screws: 1-inch	66.2

RELATIVE PRICES, 1908, COMPARED WITH AVERAGE PRICE FOR 1890-1899—Concluded.

[Average price for 1890-1899=100.0.]

Lumber and building materials, 20 articles.

Article.	Relative price, 1908.	Article.	Relative price, 1908.
PRICE INCREASED.		PRICE INCREASED—concluded.	
Window glass: American, single, thirds	103.4	Oak: white, quartered	149.3
Cement: Rosendale	107.1	Pine: yellow, siding, long leaf	165.2
Window glass: American, single, firsts	109.7	Hemlock	174.5
Carbonate of lead: American	112.7	Poplar	185.8
Maple: hard	119.3	Rosin: common to good, strained	227.9
Lime: common	125.4		
Shingles: cypress	125.4	PRICE DECREASED.	
Oxide of zinc	128.3		
Oak: white, plain	131.7	Linseed oil: raw	96.5
Tar	132.8	Brick: common, domestic	91.8
Turpentine: spirits of	135.6	Putty: bulk	75.9
Spruce	144.9		

Drugs and chemicals, 9 articles.

Article.	Relative price, 1908.	Article.	Relative price, 1908.
PRICE INCREASED.		PRICE DECREASED.	
Alum: lump	104.8	Quinine: American	63.7
Brimstone: crude	105.3	Alcohol: wood, refined	44.8
Glycerin: refined	106.6		
Sulphuric acid	114.6		
Alcohol: grain	117.7		
Muriatic acid	129.8		
Opium: natural, in cases	199.8		

House furnishing goods, 13 articles.

Article.	Relative price, 1908.	Article.	Relative price, 1908.
PRICE INCREASED.		PRICE DECREASED.	
Earthenware: plates, white granite	102.4	Earthenware: teacups and saucers, white granite	98.8
Earthenware: plates, cream-colored	104.0	Table cutlery: carvers	93.8
Glassware: nappies	108.9	Table cutlery: knives and forks	89.4
Wooden ware: tubs, oak-grained	122.5	Glassware: pitchers	82.0
Furniture: tables, kitchen	124.7	Glassware: tumblers	74.6
Furniture: chairs, bedroom, maple	152.0		
Furniture: chairs, kitchen	156.8		
Wooden ware: pails, oak-grained	161.7		

Miscellaneous, 12 articles.

Article.	Relative price, 1908.	Article.	Relative price, 1908.
PRICE INCREASED.		PRICE INCREASED—concluded.	
Rope: manila	108.7	Cotton-seed meal	133.8
Rubber: Para Island, new	108.8	Cotton-seed oil: summer yellow, prime	134.4
Tobacco: smoking, granulated	117.9		
Proof spirits	118.0	PRICE DECREASED.	
Tobacco: plug	118.6		
Soap: castile, mottled, pure	123.0	Paper: wrapping, manila	90.4
Starch: laundry	124.4	Paper: news, wood	82.9
Malt: western made	132.7		

The 1908 prices of all of the 14 articles included in the farm products group, except hops, were higher than the average price for 1890 to 1899. The 1908 price, compared with the average price for 1890 to 1899, shows oats 89.5 per cent above; corn, 79.9 per cent above; barley, 61.8 per cent above; rye, 48 per cent above; hides, 42.6 per cent above; cotton, 34.8 per cent above, etc. The price of hops was 32.9 per cent below the average price for 1890 to 1899.

Forty-one of the 48 articles of food shown in this table were higher and 7 lower in price than the average for 1890 to 1899. In 1908 the price of mess beef was 64.5 per cent above the average price for 1890 to 1899; currants, 62.4 per cent above; yellow meal, 58.8 per cent above; beef hams, 53.2 per cent above; potatoes, 42.6 per cent above; eggs, 42 per cent above; beans, 38.9 per cent above, etc. The price of coffee was 52.2 per cent below the average price for 1890 to 1899; tea, 24.9 per cent below; prunes, 22.7 per cent below; soda crackers, 9.5 per cent below, etc.

Of the 44 articles considered in the cloths and clothing group in 1908, the prices of 38 were above and 5 below, while 1 article was the same as the average price for 1890 to 1899. In 1908 the price of Atlantic Mills cotton warp cashmere was 38.6 per cent above the average price for 1890 to 1899; Stark drillings, 37.8 per cent above; bags, 34.3 per cent above; cotton thread, 31.7 per cent above; Ohio fine fleece wool, 29.6 per cent above, etc.

Of the 13 articles included in the fuel and lighting group in 1908, the prices of the less important articles of matches and candles only were below the average price for 1890 to 1899. The price of crude petroleum was 95.6 per cent above the average price for 1890 to 1899; Georges Creek coal at the mine, 62.2 per cent above; refined petroleum, 51.7 per cent above, etc.

Thirty-one articles are considered in the metals and implements group. The prices of two articles in 1908 were the same as the average price for 1890 to 1899, while the prices of 24 articles were above and of 5 below the average price for 1890 to 1899. Doorknobs were 135.7 per cent above; locks, 103.2 per cent above; chisels, 98 per cent above; pig tin, 60.2 per cent above; pig iron, gray forge, 29.6 per cent above, etc. The price of wood screws was 33.8 per cent below the average for 1890 to 1899; bar silver, 28.6 per cent below; wire nails, 2.9 per cent below, etc.

Of the 20 articles included in the lumber and building materials group, all but 3 showed prices above the average for 1890 to 1899. The price of rosin was 127.9 per cent above the average price for 1890 to 1899; poplar, 85.8 per cent above; hemlock, 74.5 per cent above; yellow pine siding, 65.2 per cent above, etc. The price of putty was 24.1 per cent below the average for 1890 to 1899, and of brick 8.2 per cent below.

Of the 9 articles included in the group of drugs and chemicals, 7 were above and 2 below the average price for 1890 to 1899.

Of the 13 articles considered in the group of house furnishing goods, the 1908 prices of 8 were above and of 5 below the average price for 1890 to 1899.

Of the 12 articles included in the miscellaneous group, the 1908 prices of 10 were above and of 2 below the average price for 1890 to 1899.

The facts presented in the foregoing table are summarized in the following table, which shows the changes in prices of articles in each group, classified by per cent of change:

CHANGES IN PRICES OF ARTICLES IN EACH GROUP, CLASSIFIED BY PER CENT OF CHANGE, 1908 COMPARED WITH AVERAGE PRICE FOR 1890-1899.

Group.	Number of articles.	Number of articles for which price—									
		Increased—					Was same as base.	Decreased—			
		100 per cent and more.	50 and under 100 per cent.	25 and under 50 per cent.	10 and under 25 per cent.	Less than 10 per cent.		Less than 10 per cent.	10 and under 25 per cent.	25 and under 50 per cent.	50 per cent and more.
Farm products	14	.....	3	8	1	1	.....	.....	.....	1	.....
Food, etc	48	.....	6	15	13	7	.....	2	3	1	1
Cloths and clothing	44	.....	.....	9	22	7	1	4	1	.....	.....
Fuel and lighting	13	.....	3	5	2	1	.....	1	1	.....	.....
Metals and implements	31	2	2	3	8	9	2	3	.....	2	.....
Lumber and building materials	20	1	3	8	2	3	.....	2	1	.....	.....
Drugs and chemicals	9	.....	1	1	2	3	.....	.....	.....	1	1
House furnishing goods	13	.....	3	.....	2	3	.....	2	2	1	.....
Miscellaneous	12	.....	.....	3	5	2	.....	1	1	.....	.....
Total	204	3	21	52	57	36	3	15	9	6	2

It is seen in the above comparison of the prices of 1908 with the average for 1890 to 1899 that of the 14 articles in the farm products group, 13 show an increase and 1 a decrease; of the 48 in the food, etc., group, 41 show an increase and 7 a decrease; of the 44 in the cloths and clothing group, 38 show an increase, 1 shows the same price as the average for the base period, and 5 show a decrease; of the 13 in the fuel and lighting group, 11 show an increase and 2 show a decrease; of the 31 in the metal and implements group, 24 show an increase, 2 show the same price as the average for the base period, and 5 show a decrease; of the 20 in the lumber and building materials group, 17 show an increase and 3 a decrease; of the 9 in the drugs and chemicals group, 7 show an increase and 2 a decrease; of the 13 in the house furnishing goods group, 8 show an increase and 5 a decrease; of the 12 in the miscellaneous group, 10 show an increase and 2 a decrease. Of the 204 commodities included in this table, 169 show an increase, 3 show the same price as the average for the base period, and 32 show a decrease.

The number of articles according to classified per cents of increase and decrease is also shown in the following table. Of the 169 commodities that showed an increase in 1908 over the average for 1890 to 1899, 36 advanced less than 10 per cent, 57 advanced 10 and under 25 per cent, 52 advanced 25 and under 50 per cent, 21 advanced 50 and under 100 per cent, and 3 advanced 100 per cent and more. Of the 32 commodities which showed a decrease, 15 decreased less than 10 per cent, 9 decreased 10 and under 25 per cent, 6 decreased 25 and under 50 per cent, and 2 decreased 50 per cent and more.

The number and per cent of articles which showed each specified increase or decrease are given in the following table:

NUMBER AND PER CENT OF ARTICLES, BY CLASSIFIED PER CENT OF INCREASE OR DECREASE, 1908 COMPARED WITH AVERAGE PRICE FOR 1890-1899.

	Number of articles.	Per cent of articles.		Number of articles.	Per cent of articles.
Price increased—			Price decreased—		
100 per cent and more.....	3	1.5	Less than 10 per cent.....	15	7.4
50 and under 100 per cent..	21	10.3	10 and under 25 per cent..	9	4.4
25 and under 50 per cent...	52	25.5	25 and under 50 per cent..	6	2.9
10 and under 25 per cent...	57	27.9	50 per cent and more.....	2	1.0
Less than 10 per cent......	36	17.6			
Total....................	169	82.8	Total....................	32	15.7
Price same as base............	3	1.5	Grand total............	204	100.0

Of the 204 articles included in this table, it is seen that 169, or 82.8 per cent, show an increase in price; 3 articles, or 1.5 per cent, show the same price as the average for the base period, and 32 articles, or 15.7 per cent, show a decrease in price in 1908 as compared with the average price for the base period.

Of the 258 commodities considered in the compilation of prices for 1908, the average price for 162 commodities was lower in 1908 than in 1907, the average price of 33 was the same in 1908 as in 1907, and the average price of 63 was higher in 1908 than in 1907.

The following table shows the relative prices of certain related articles, so grouped as to render easy a comparison of the course of these prices during the years from 1890 to 1908:

RELATIVE PRICES OF CERTAIN GROUPS OF RELATED ARTICLES, 1890 TO 1908.

[Average price for 1890-1899=100.0.]

Year.	Cattle and cattle products.						Dairy products.		
	Cattle.	Beef, fresh.	Beef, hams.	Beef, mess.	Tallow.	Hides.	Milk.	Butter.	Cheese.
1890....	89.5	89.2	80.4	86.8	105.7	99.6	103.1	100.4	97.1
1891....	109.2	106.2	85.8	104.4	111.0	101.5	104.7	116.1	102.4
1892....	95.4	98.8	80.5	84.8	106.4	92.8	105.1	116.4	107.2
1893....	103.0	105.4	98.6	102.2	125.1	79.9	109.4	121.3	109.0
1894....	96.3	97.0	101.5	101.0	110.3	68.4	103.1	102.2	107.4
1895....	103.7	102.7	95.9	101.4	99.8	109.7	99.2	94.5	94.1
1896....	88.3	90.5	88.1	93.7	78.9	86.6	91.8	82.3	92.0
1897....	99.5	99.7	125.1	95.7	76.3	106.3	92.2	84.1	98.1
1898....	102.2	101.3	118.8	114.2	81.8	122.8	93.7	86.8	83.3
1899....	113.2	108.3	125.6	115.9	104.1	131.8	99.2	95.8	108.9
1900....	111.3	104.3	114.2	121.7	111.5	127.4	107.5	101.7	114.3
1901....	116.6	102.1	112.6	116.3	119.1	132.0	102.7	97.7	102.4
1902....	139.5	125.9	118.0	147.1	144.6	142.8	112.9	112.1	114.1
1903....	105.8	101.7	117.2	113.1	117.2	124.8	112.9	105.7	123.3
1904....	110.9	106.1	123.5	109.4	105.5	124.4	107.8	98.4	103.2
1905....	111.2	104.0	121.6	125.0	103.2	152.6	113.3	112.8	122.8
1906....	114.2	101.2	119.2	110.3	119.3	164.7	118.0	113.1	133.0
1907....	122.9	114.7	144.0	122.5	142.8	155.3	131.4	128.5	143.3
1908....	127.4	129.5	153.2	164.5	126.7	142.6	129.0	122.1	138.2

RELATIVE PRICES OF CERTAIN GROUPS OF RELATED ARTICLES, 1890 TO 1908—Cont'd.

[Average price for 1890-1899=100.0.]

Year.	Hogs and hog products.					Sheep and sheep products.		
	Hogs.	Bacon.	Hams, smoked.	Mess pork.	Lard.	Sheep.	Mutton.	Wool.
1890.....	89.2	89.3	101.1	104.4	96.8	119.3	123.7	132.1
1891.....	99.2	103.7	99.8	97.2	100.9	117.8	114.9	125.8
1892.....	115.7	116.6	109.3	99.1	117.9	125.2	121.2	113.2
1893.....	148.6	154.7	126.9	157.6	157.5	103.8	106.5	101.6
1894.....	112.2	111.8	103.6	121.4	118.2	73.6	80.2	79.1
1895.....	96.6	96.3	96.2	101.7	99.8	78.4	82.2	70.1
1896.....	78.3	73.1	95.8	76.8	71.7	78.7	82.9	70.6
1897.....	82.8	79.9	90.9	76.6	67.4	94.2	96.6	88.7
1898.....	85.6	89.4	82.0	84.8	84.4	104.9	98.0	108.3
1899.....	91.8	85.8	93.8	80.3	85.0	104.3	94.3	110.8
1900.....	115.5	111.5	104.2	107.5	105.5	112.0	96.4	117.7
1901.....	134.5	132.3	109.2	134.2	135.3	92.0	89.5	96.6
1902.....	155.2	159.3	123.1	154.2	161.9	103.2	97.9	100.8
1903.....	137.2	142.6	129.2	143.1	134.1	98.4	98.7	110.3
1904.....	116.7	115.1	108.9	120.6	111.8	109.1	103.2	115.5
1905.....	120.2	119.0	106.3	123.9	113.9	131.5	113.9	127.3
1906.....	142.2	139.9	125.5	150.5	135.6	132.6	120.7	121.1
1907.....	139.2	140.7	132.4	151.0	140.7	126.9	116.0	121.5
1908.....	129.5	133.1	114.3	137.3	138.8	111.0	114.5	118.3

Year.	Corn, etc.			Flaxseed, etc.		Rye and rye flour.		Wheat and wheat flour.		Flour, etc.		
	Corn.	Glucose.(a)	Meal.	Flaxseed.	Linseed oil.	Rye.	Rye flour.	Wheat.	Wheat flour.	Wheat flour.	Crackers.	Loaf bread.
1890.....	103.8	....	100.8	125.5	135.8	103.0	101.4	118.9	120.9	120.9	107.7	100.9
1891.....	151.0	....	142.0	97.1	106.8	157.6	148.3	128.1	125.6	125.6	107.7	100.9
1892.....	118.3	....	114.0	91.4	90.0	127.7	121.1	104.9	104.2	104.2	104.3	100.9
1893.....	104.2	124.3	105.8	97.7	102.2	92.6	93.0	90.1	89.3	89.3	100.6	100.9
1894.....	113.7	111.4	105.6	121.6	115.6	88.1	83.8	74.4	77.6	77.6	98.8	100.9
1895.....	104.0	109.2	103.3	111.8	115.6	91.2	94.5	79.9	84.4	84.4	95.6	98.7
1896.....	67.8	81.7	77.4	72.9	81.2	66.5	80.9	85.4	91.2	91.2	94.1	94.5
1897.....	66.9	86.0	76.5	78.1	72.2	74.9	84.6	105.8	110.1	110.1	85.3	100.9
1898.....	82.6	91.8	83.7	99.8	86.5	93.8	92.9	117.8	109.0	109.0	107.3	100.9
1899.....	87.6	95.6	91.2	104.0	94.1	104.4	99.4	94.7	87.9	87.9	99.1	100.9
1900.....	100.2	104.9	97.0	145.7	138.7	97.9	103.3	93.7	88.3	88.3	102.7	100.9
1901.....	130.6	116.0	115.5	145.8	140.0	100.8	100.1	95.7	87.4	87.4	108.2	100.9
1902.....	156.9	153.6	148.2	135.0	130.8	102.5	103.8	98.7	89.7	89.7	108.2	100.9
1903.....	121.1	129.7	124.7	94.1	91.9	97.5	94.9	105.1	97.1	97.1	101.3	100.9
1904.....	132.6	126.3	129.5	99.6	91.7	133.4	131.1	138.3	125.4	125.4	103.4	106.0
1905.....	131.7	125.1	128.4	107.6	103.1	134.5	134.7	134.5	122.3	122.3	113.8	110.9
1906.....	121.8	142.9	122.5	99.1	89.3	115.5	115.9	105.6	96.8	96.8	112.1	110.9
1907.....	138.8	159.4	131.5	106.1	95.7	145.4	138.7	120.8	108.6	108.6	112.1	110.9
1908.....	179.9	186.2	156.4	108.0	96.5	148.0	142.8	131.8	118.8	118.8	112.1	114.5

Year.	Cotton and cotton goods.									
	Cotton: upland, middling.	Bags: 2-bushel, Amoskeag.	Calico.	Cotton flannels.	Cotton thread.	Cotton yarns.	Denims.	Drillings.	Ginghams.	Hosiery.
1890.....	142.9	113.9	117.5	121.8	101.6	111.7	112.5	121.1	119.1	129.7
1891.....	110.8	111.7	104.0	121.8	100.7	112.8	109.6	114.6	122.1	122.8
1892.....	99.0	110.8	117.5	115.9	100.7	117.0	109.6	102.2	122.1	117.4
1893.....	107.2	106.8	113.0	101.4	100.7	110.5	112.5	105.6	114.9	109.4
1894.....	90.2	91.1	99.5	95.7	100.7	93.0	105.4	97.1	89.5	100.8
1895.....	94.0	82.2	94.9	91.7	100.7	92.1	94.6	93.2	87.0	94.4
1896.....	102.0	91.6	94.9	93.9	99.6	93.0	94.6	100.2	88.0	90.5
1897.....	92.2	92.9	90.4	88.6	98.4	90.6	89.2	90.4	84.2	86.7
1898.....	76.9	95.6	81.4	81.0	98.4	90.8	85.9	86.8	83.1	83.4
1899.....	84.7	103.4	87.3	88.0	98.4	88.5	85.8	88.5	89.7	82.5
1900.....	123.8	112.6	94.9	101.6	120.1	115.5	102.8	105.0	96.3	87.3
1901.....	111.1	101.0	90.4	95.4	120.1	98.3	100.2	102.2	92.3	85.9
1902.....	115.1	102.4	90.4	96.1	120.1	94.0	100.6	102.0	99.2	85.2
1903.....	144.7	104.2	91.1	106.8	120.1	112.9	108.0	109.9	101.8	90.1
1904.....	155.9	128.4	95.7	125.6	120.1	119.5	116.6	126.7	99.9	89.2
1905.....	123.1	109.6	93.5	119.7	120.1	105.7	103.7	123.8	93.4	87.5
1906.....	142.0	129.1	99.5	128.2	120.1	120.8	118.1	138.8	104.7	89.7
1907.....	153.0	138.5	121.0	139.5	134.8	133.9	132.3	147.2	122.0	97.4
1908.....	134.8	134.3	104.3	119.2	131.7	108.8	111.1	130.6	101.5	89.5

[a] Average for 1893-1899=100.

RELATIVE PRICES OF CERTAIN GROUPS OF RELATED ARTICLES, 1890 TO 1908—Concluded.

[Average price for 1890-1899=100.0.]

Year.	Cotton and cotton goods.				Wool and woolen goods.					
	Print cloths.	Sheetings.	Shirtings.	Tickings.	Wool.	Blankets (all wool).	Broadcloths.	Carpets.	Flannels.	Horse blankets.
1890	117.7	117.6	112.9	113.1	132.1	108.3	113.7	105.3	116.8	109.1
1891	103.5	112.3	110.2	110.7	125.8	106.0	113.7	112.8	116.8	104.7
1892	119.3	103.8	107.4	108.4	113.2	107.1	113.7	104.5	115.9	109.1
1893	114.6	107.7	110.2	111.3	101.6	107.1	113.7	104.5	109.5	104.7
1894	96.8	95.9	99.9	102.2	79.1	101.2	91.2	98.7	94.1	96.0
1895	100.9	94.6	97.6	94.8	70.1	89.3	79.7	91.0	81.7	92.5
1896	90.9	97.4	97.9	96.0	70.6	89.3	79.7	90.2	85.4	90.8
1897	87.6	91.8	92.0	91.9	88.7	89.3	98.2	93.5	82.6	99.5
1898	72.6	86.7	83.8	84.3	108.3	107.1	98.2	100.2	97.8	99.5
1899	96.3	92.2	87.8	87.0	110.8	95.2	98.2	99.4	99.5	94.2
1900	108.6	105.9	100.4	102.2	117.7	107.1	108.0	102.7	108.7	118.7
1901	99.3	101.8	98.9	95.5	96.6	101.2	110.3	101.9	100.8	109.9
1902	108.9	101.4	98.8	99.0	100.8	101.2	110.3	102.5	105.8	109.9
1903	113.3	110.6	103.2	104.1	110.3	110.1	110.3	108.6	114.3	117.8
1904	117.3	121.1	104.7	114.3	115.5	110.1	110.5	110.0	117.6	122.2
1905	110.0	113.5	101.2	102.1	127.3	119.0	115.2	115.7	118.4	130.9
1906	127.7	122.4	111.1	119.0	121.1	122.0	116.6	117.7	122.4	135.3
1907	167.4	132.2	137.4	129.4	121.5	119.0	116.6	123.2	123.1	130.9
1908	118.0	120.0	120.0	106.0	118.3	113.1	115.6	118.9	122.4	126.5

Year.	Wool and woolen goods.						Hides, leather, and boots and shoes.			Petroleum.	
	Overcoatings (all wool).	Shawls.	Suitings.	Underwear (all wool).	Women's dress goods (all wool).	Worsted yarns.	Hides.	Leather.	Boots and shoes.	Crude.	Refined.
1890	111.9	107.0	113.1	106.2	117.6	122.3	99.6	100.6	104.8	95.4	112.4
1891	111.9	107.0	113.1	110.0	123.0	123.4	101.5	100.9	103.5	73.6	102.2
1892	111.9	107.0	113.4	110.0	124.1	117.2	92.8	97.0	102.7	61.1	91.5
1893	108.6	107.0	112.7	110.0	114.7	109.5	79.9	96.9	100.9	70.3	81.0
1894	97.5	107.0	98.3	92.7	90.6	91.3	68.4	91.5	99.4	92.2	80.5
1895	90.8	107.0	89.2	92.7	82.7	74.0	109.7	108.0	98.7	149.2	106.6
1896	86.7	89.1	87.8	92.7	74.1	72.9	86.6	95.2	99.6	129.5	112.5
1897	87.8	89.5	88.7	92.7	82.2	82.5	106.3	96.1	97.2	86.5	96.6
1898	97.1	90.2	103.4	92.7	88.5	100.5	122.8	104.4	96.3	100.2	99.5
1899	100.6	89.1	106.1	100.4	102.7	106.7	131.8	109.3	96.8	142.1	118.0
1900	116.1	107.0	115.8	100.4	118.7	118.4	127.4	113.2	99.4	148.5	132.6
1901	105.3	107.0	104.9	100.4	107.9	102.2	132.0	110.8	99.2	132.9	119.3
1902	105.3	107.0	105.8	100.4	109.8	111.7	142.8	112.7	98.9	135.9	118.8
1903	110.2	107.0	109.0	100.4	114.4	118.0	124.8	112.0	100.2	174.5	142.8
1904	110.3	107.0	109.0	100.4	115.6	116.5	124.4	108.5	101.1	178.8	140.5
1905	118.2	117.5	122.7	100.4	129.7	124.7	152.6	112.1	107.4	152.1	126.6
1906	126.1	128.5	134.8	115.8	134.1	128.5	164.7	120.4	121.8	175.5	131.8
1907	124.8	107.0	133.1	115.8	130.9	127.9	155.3	124.0	125.9	190.5	139.1
1908	122.6	(*a*)	127.6	115.8	127.0	117.6	142.6	119.4	121.3	195.6	143.1

a Quotations discontinued.

This table shows for all of the 6 articles grouped under cattle and cattle products (cattle, fresh beef, beef hams, mess beef, tallow, and hides) an advance in price in 1891, but not in the same degree; in 1892, a decline in all of the articles in this group; in 1893, an increase, except for hides, for which there was a further decline; in 1894, a decline, except for beef hams, which increased; in 1895, an increase, except for beef hams and tallow; in 1896, a decline in all of the articles; in 1897, an increase, except for tallow; in 1898, an increase for all of the articles, except beef hams; in 1899, an increase for all; in 1900, a decline, except for mess beef and tallow; in 1901, an increase for cattle, tallow, and hides, and a decline for fresh beef, beef hams, and mess beef; in 1902, an increase for all; in 1903, a decrease for all; in 1904, an increase for cattle, fresh beef, and hams, and a decrease for mess beef, tallow, and hides; in 1905, an increase for cattle, mess beef, and hides, and a decrease for fresh beef, beef hams, and tallow; in 1906, an increase for cattle, hides, and tallow, and a decrease for fresh beef, beef hams, and mess beef; in 1907, an increase for all except hides, which decreased; in 1908 an increase for cattle, fresh beef, beef hams, and mess beef, and a decrease for tallow and hides.

For the 19 years from 1890 to 1908 the lowest relative price for cattle was 88.3 in 1896, the highest 139.5 in 1902; the lowest for fresh beef 89.2 in 1890, the highest 129.5 in 1908; the lowest for beef hams 80.4 in 1890, the highest 153.2 in 1908; the lowest for mess beef 84.8 in 1892, the highest 164.5 in 1908; the lowest for tallow 76.3 in 1897, the highest 144.6 in 1902; the lowest for hides 68.4 in 1894, the highest 164.7 in 1906. The facts for the other groups may be seen by reference to the table.

General Tables I, II, III, IV, and V follow.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908.

[For explanation and discussion of this table, see pages 218 to 228.]

FARM PRODUCTS.

BARLEY: Choice to fancy malting, by sample.

[Price per bushel, in Chicago, weekly range; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.99-$1.05	Apr....	$0.80 -$0.86	July....	$0.60-$0.65	Oct.....	$0.59 -$0.62
	1.00- 1.06		.80 - .85		.69- .74		.59 - .61
	.96- 1.06		.80 - .85		.73- .74		.61 - .63
	.91- 1.03		.80 - .87		.69- .70		.58 - .62
	.90- 1.00				.63- .69		.59 - .60
Feb.....	.89- .93	May....	.74 - .85	Aug....	.63- .65	Nov.....	.59 - .63
	.87- .90		.70 - .74		.65- .67		.63 - .67
	.87- .90		.72 - .75		.65- .68		.63 - .64
	.87- .92		.69 - .75		.65- .68		.61 - .64
			.62½- .65				
Mar.....	.89- .93	June...	.61 - .66	Sept....	.64- .66	Dec.....	.60 - .64½
	.90- .95		.53 - .61		.65- .67		.63½- .64
	.83- .90		.53 - .62		.64- .66		.62 - .65
	.84- .89		.60 - .65		.61- .62		.62 - .64
						Average.	$0.7336

CATTLE: Steers, choice to fancy.

[Price per hundred pounds, in Chicago, on Monday of each week; quotations from the Farmers' and Drovers' Journal.]

Jan.....	$5.40-$6.15	Apr....	$6.65-$7.35	July....	$7.15-$8.25	Oct.....	$6.20-$7.00
	5.80- 6.30		6.35- 7.05		6.85- 8.00		6.25- 7.10
	5.60- 6.25		6.50- 7.10		6.60- 7.75		6.25- 7.10
	5.55- 6.20		6.50- 7.25		6.35- 7.40		6.30- 7.00
Feb.....	5.55- 6.15	May....	6.65- 7.25	Aug....	6.40- 7.20	Nov.....	6.30- 6.90
	5.50- 6.00		6.80- 7.30		6.40- 7.20		6.90- 7.00
	5.55- 6.00		6.50- 7.25		6.50- 7.20		6.60- 7.50
	5.50- 6.00		6.50- 7.30		6.75- 7.35		6.90- 7.90
					6.90- 7.40		6.75- 7.85
Mar.....	5.65- 6.00	June...	6.70- 7.35	Sept...	6.60- 7.10	Dec.....	6.90- 8.00
	5.85- 6.35		7.10- 7.75		6.55- 7.10		6.90- 7.75
	6.10- 6.40		7.50- 8.40		6.25- 7.00		7.00- 7.85
	6.65- 7.00		7.25- 8.15		6.35- 7.15		6.90- 7.50
	6.90- 7.50		7.75- 8.40				
						Average.	$6.8163

CATTLE: Steers, good to choice.

[Price per hundred pounds, in Chicago, on Monday of each week; quotations from the Farmers' and Drovers' Journal.]

Jan.....	$4.80-$5.30	Apr....	$6.15-$6.60	July....	$6.15-$7.00	Oct.....	$5.25-$6.15
	5.25- 5.75		5.80- 6.30		5.85- 6.80		5.25- 6.20
	5.05- 5.50		6.00- 6.45		5.70- 6.50		5.25- 6.15
	5.00- 5.50		5.90- 6.40		5.50- 6.30		5.05- 6.20
Feb.....	5.15- 5.50	May....	6.00- 6.60	Aug....	5.40- 6.30	Nov.....	5.05- 6.20
	5.05- 5.45		6.15- 6.75		5.40- 6.30		5.50- 6.75
	5.15- 5.50		5.95- 6.45		5.40- 6.40		5.35- 6.50
	5.15- 5.45		5.80- 6.40		5.75- 6.65		5.65- 6.75
					5.80- 6.75		5.65- 6.60
Mar.....	5.35- 5.60	June...	5.95- 6.60	Sept...	5.45- 6.50	Dec.....	5.80- 6.75
	5.45- 5.80		6.35- 7.00		5.60- 6.50		5.80- 6.75
	5.65- 6.05		6.60- 7.40		5.25- 6.15		6.00- 6.90
	6.25- 6.60		6.25- 7.15		5.30- 6.25		5.85- 6.75
	6.40- 6.80		6.10- 7.10				
						Average.	$5.9976

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FARM PRODUCTS—Continued.

CORN: Contract, cash.

[Price per bushel, in Chicago, on Tuesday of each week; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.60	Apr....	$0.66¾–$0.67¼	July....	$0.72½–$0.73	Oct.....	$0.77¼–$0.77½
	$0.59½– .60		.66½– .67		.74¼– .74¾		.76½– .76¾
	.59 – .59½		.66⅞		.75¼– .76¼		.71¼– .71¾
	.58½– .59		.66¼		.75 – .75½		.67½– .70
Feb.....	.58 – .59	May....	.70⅜	Aug....	.77½– .78	Nov.....	.64 – .65
	.57 – .58		.71½		.79½– .80		.62¼– .64¼
	.57 – .57½		.78 – .78¼		.78 – .78½		.63 – .65
	.57½– .58½		.78¾		.78 – .78½		.63¼– .63¾
Mar.....	.60 – .60½	June...	.73 – .73½	Sept...	.79½– .80	Dec.....	.61½– .61¾
	.62¼– .63		.69¼– .69¾		.80 – .80¼		.60 – .60¾
	.63¾– .64¼		.68 – .68½		.81¼– .81½		.58¾
	.65¾– .66		.69¾– .70¼		.78 – .78½		.57 – .57¾
	.64¾– .65¼		.69½– .70		.78¼– .78¾		.58 – .58¼
						Average.	$0.6843

COTTON: Upland, middling.

[Price per pound, in New York, on Tuesday of each week; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.1130	Apr....	$0.1025	July....	$0.1120	Oct.....	$0.0905
	.1165		.1000		.1110		.0915
	.1210		.1000		.1100		.0925
	.1165		.1000		.1170		.0940
Feb.....	.1185	May....	.1040	Aug....	.1080	Nov.....	.0940
	.1165		.1105		.1055		.0935
	.1145		.1090		.1040		.0945
	.1135		.1150		.0980		.0945
Mar.....	.1165	June...	.1150	Sept...	.0930	Dec.....	.0935
	.1150		.1140		.0930		.0925
	.1105		.1175		.0940		.0910
	.1040		.1180		.0930		.0925
	.1050		.1150		.0930		.0930
						Average.	$0.10463

FLAXSEED: No. 1.

[Price per bushel, in Chicago, on the first of each month; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.11 –$1.21	Apr....	$1.08 –$1.18	July....	$1.14½–$1.21¾	Oct.....	$1.14 –$1.24
Feb.....	1.09 – 1.19½	May....	1.11½– 1.21½	Aug....	1.18¼– 1.26¾	Nov.....	1.18½– 1.28½
Mar.....	1.09½– 1.19½	June...	1.17½– 1.24½	Sept...	1.18 – 1.28	Dec.....	1.35½– 1.45½
						Average.	$1.2019

HAY: Timothy, No. 1.

[Price per ton, in Chicago, on Tuesday of each week; quotations from the Daily Inter-Ocean.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$13.00–$14.00	Apr....	$13.00–$14.00	July...	$9.50–$10.00	Oct.....	$10.50–$11.50
	12.50– 13.50		13.00– 14.00		11.00– 12.00		11.00– 12.00
	12.50– 13.50		13.50– 14.50		11.00– 12.00		11.00– 12.00
	12.00– 13.50		14.00– 15.00		11.00– 12.00		11.00– 12.00
Feb.....	12.50– 14.00	May...	14.00– 15.00	Aug....	11.00– 12.00	Nov.....	12.00– 12.50
	12.50– 14.00		13.50– 14.50		11.00– 12.00		12.00– 12.50
	12.50– 14.00		13.50– 14.50		10.50– 11.50		12.00– 12.50
	14.00– 15.00		13.00– 14.00		10.50– 11.50		11.50– 12.50
Mar.....	14.50– 15.50	June...	13.00– 14.00	Sept...	10.00– 11.00	Dec.....	11.50– 12.50
	14.50– 15.00		12.00– 13.00		10.50– 11.50		12.00– 13.00
	13.00– 14.00		10.00– 11.00		10.50– 11.00		12.00– 13.00
	13.00– 14.00		9.50– 10.00		10.50– 11.50		11.00– 12.00
	12.50– 13.50		9.50– 10.00		10.50– 11.50		11.00– 12.00
						Average.	$12.3365

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FARM PRODUCTS—Continued.

HIDES: Green, salted, packers', heavy native steers.

[Average monthly price per pound, in Chicago; quotations from the Shoe and Leather Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.1116	Apr....	$0.1050	July....	$0.1500	Oct.....	$0.1565
Feb.....	.1037	May....	.1175	Aug....	.1563	Nov.....	.1581
Mar.....	.0944	June...	.1325	Sept...	.1575	Dec.....	.1600
						Average.	$0.1336

HOGS: Heavy.

[Price per hundred pounds, in Chicago, on Monday of each week; quotations from the Farmers' and Drovers' Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$4.52½-$4.65	Apr....	$6.00 -$6.10	July....	$6.50-$6.70	Oct.....	$6.55-$7.00
	4.20 - 4.35		5.80 - 5.95		6.75- 7.05		6.00- 6.30
	4.37½- 4.52½		5.80 - 6.00		6.55- 6.85		5.50- 5.90
	4.45 - 4.60		5.40 - 5.50		6.25- 6.60		5.80- 6.10
Feb.....	4.35 - 4.45	May....	5.55 - 5.65	Aug....	6.55- 6.90	Nov.....	5.90- 6.15
	4.30 - 4.35		5.55 - 5.65		6.55- 6.80		5.95- 6.20
	4.30 - 4.40		5.37½- 5.50		6.70- 6.85		5.70- 5.95
	4.30 - 4.40		5.35 - 5.50		6.40- 6.80		6.00- 6.25
					6.75- 7.10		5.75- 6.00
Mar.....	4.50 - 4.60	June...	5.55 - 5.65	Sept...	6.75- 7.05	Dec.....	5.65- 5.85
	4.70 - 4.77½		5.50 - 5.60		7.15- 7.42½		5.60- 5.80
	4.65 - 4.75		5.67½- 5.80		7.05- 7.40		5.60- 5.85
	4.97½- 5.10		5.95 - 6.15		6.85- 7.25		5.95- 6.15
	5.95 - 6.05		6.35 - 6.55				
						Average.	$5.7986

HOGS: Light.

[Price per hundred pounds, in Chicago, on Monday of each week; quotations from the Farmers' and Drovers' Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$4.25-$4.65	Apr....	$5.85-$6.20	July....	$6.15-$6.75	Oct.....	$6.00-$6.95
	4.00- 4.35		5.50- 6.00		6.45- 7.00		5.50- 6.30
	4.15- 4.50		5.55- 6.00		6.15- 6.80		5.10- 5.85
	4.25- 4.60		5.15- 5.55		6.00- 6.60		5.15- 6.05
Feb.....	4.15- 4.45	May....	5.40- 5.70	Aug....	6.30- 6.90	Nov.....	5.30- 6.15
	4.15- 4.37½		5.40- 5.65		6.35- 6.80		5.30- 6.15
	4.15- 4.40		5.25- 5.50		6.35- 6.85		5.30- 5.90
	4.15- 4.40		5.20- 5.50		5.90- 6.80		5.40- 6.20
					6.55- 7.10		5.00- 6.00
Mar.....	4.30- 4.60	June...	5.35- 5.67½	Sept...	6.50- 7.05	Dec.....	5.00- 5.85
	4.50- 4.80		5.30- 5.62½		6.90- 7.40		5.00- 5.80
	4.45- 4.77½		5.40- 5.80		6.80- 7.45		4.85- 5.80
	4.75- 5.10		5.75- 6.15		6.50- 7.20		5.30- 6.15
	5.75- 6.05		6.00- 6.55				
						Average.	$5.6346

HOPS: New York State, prime to choice.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.15-$0.16	Apr....	$0.11-$0.12	July....	$0.08-$0.10	Oct.....	[a] $0.13-$0.14
Feb.....	.15- .16	May....	.11- .12	Aug....	.07- .08	Nov.....	.13- .14
Mar.....	.13- .14	June...	.11- .12	Sept...	.06- .07	Dec.....	.13- .14
						Average.	$0.1188

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[a] New crop.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FARM PRODUCTS—Continued.

HORSES: Draft, good to choice.

[Price per head, in Chicago, on Wednesday of each week; quotations from the Farmers' and Drovers' Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$170-$220	Apr....	$170-$225	July....	$170-$225	Oct.....	$165-$215
	170-220		170-225		170-225		165-215
	170-220		170-225		170-225		165-215
	170-225		170-230		170-225		165-215
	170-225		170-230		170-225		....
Feb.....	170-225	May....	170-230	Aug....	170-225	Nov.....	165-215
	170-225		170-230		170-225		165-215
	170-225		170-230		170-225		165-215
	170-225		170-230		170-225		165-215
Mar.....	170-225	June...	170-230	Sept...	170-225	Dec.....	(a)
	170-225		170-230		170-225		(a)
	170-225		170-230		170-225		165-215
	170-225		170-225		170-225		165-215
	....		....		....		165-215
						Average.	$196.18

MULES: 16 hands high, medium to good.

[Price per head, in East St. Louis, on Monday of each week; quotations from the Daily National Live Stock Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$150-$200	Apr....	$155-$225	July....	$155-$225	Oct.....	$155-$225
	150-200		155-225		155-225		155-225
	150-200		155-225		155-225		155-225
	150-225		155-225		155-225		155-225
Feb.....	155-230	May....	155-225	Aug....	155-225	Nov.....	155-225
	155-225		155-225		155-225		155-225
	155-225		155-225		155-225		155-225
	155-225		155-225		155-225		155-225
	....		....		155-225		155-225
Mar.....	155-225	June...	155-225	Sept....	155-225	Dec.....	155-225
	155-225		155-225		155-225		155-225
	155-225		155-225		155-225		155-225
	155-225		155-225		155-225		155-225
	155-225		155-225		....		....
						Average.	$189.13

OATS: Contract grades, cash.

[Price per bushel, in Chicago, on Tuesday of each week; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.50¾	Apr....	$0.51⅞-$0.52	July....	$0.53½	Oct.....	$0.48½
	.50½		.52½- .52⅝		.56¾		.48¼
	.50⅝		.52¾		.59		.46⅞
	.50⅞		.52¾		.52½		.47⅝
Feb.....	.50⅜	May....	.53⅝	Aug....	$0.46 - .46½	Nov.....	.49
	.50½		.54½		.48⅝- .48⅞		.49½
	.50		.54¾		.48⅞		$0.49⅜- .49½
	$0.51½- .52		.55¾		.49¼		.49⅞
Mar.....	.53½- .53¾	June...	.52	Sept....	.49⅝	Dec.....	.48⅞
	.52⅝- .52⅞		.50		.49¾- .50		.50¼
	.53¼- .53¾		.50¾- .51		.48½		.49⅞- .50
	.53⅝- .53⅞		.52¼		.48		.49¼
	.52½- .52⅞		.50½		.49¼		.49⅞
						Average.	$0.5095

[a] No quotations for week.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FARM PRODUCTS—Continued.

POULTRY: Live, fowls.

[Price per pound, in New York, on Saturday of each week; quotations from the National Provisioner.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.13	Apr....	$0.14½	July...	$0.12	Oct.....	$0.14
	.13		.15		.12		.15
	.13		.15		.13		.13½
	.12		.14		.13		.13½
							.13
Feb.....	.13	May...	.13	Aug....	.14	Nov....	.11
	.13½		.13½		.14		.12
	.14½		.13½		.13½		.11½
	.13		.13½		.12½		.11½
	.13½		.13½		.13		
Mar.....	.14	June...	.13½	Sept...	.12	Dec.....	.12
	.14		.13½		.12½		.16
	.14		.13½		.13½		.12½
	.14½		.12½		.14		.12
						Average.	$0.1327

RYE: No. 2, cash.

[Price per bushel, in Chicago, on Tuesday of each week; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.81 -$0.83	Apr....	$0.76 -$0.78	July...	$0.74 -$0.75	Oct.....	$0.75
	.84 - .85		.76 - .78		.74 - .75		$0.75½- .76
	.86 - .87		.79 - .80		.78		.75
	.83		.80		.77		.74 - .75
Feb.....	.82 - .83	May...	.80½- .81	Aug....	.76½- .78½	Nov....	.74 - .75
	.82 - .82½		.81 - .82		.78		.74
	.81 - .81½		.82 - .84		.78 - .78¾		.75
	.82		.80 - .81		.77 - .77½		.76
Mar.....	.84	June...	.78	Sept...	.76½	Dec.....	.75 - .76
	.82 - .83		.77 - .79		.76 - .76½		.75½- .76½
	.81 - .82½		.79 - .80		.76 - .76½		.76½- .76½
	.78 - .80		.77½- .78		.75½- .76		.76
	.74 - .75		.76 - .77		.75½- .76		.75
						Average.	$0.7825

SHEEP: Wethers, good to fancy.

[Price per hundred pounds, in Chicago, on Monday of each week; quotations from the Farmers' and Drovers' Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$4.75-$5.10	Apr....	$6.25-$7.00	July...	$3.85-$4.50	Oct.....	$4.25-$4.75
	5.00- 5.40		5.75- 6.10		4.25- 4.65		4.35- 5.00
	5.00- 5.40		5.65- 6.10		4.35- 4.75		4.25- 4.60
	5.15- 5.50		5.50- 6.10		4.25- 4.65		4.25- 4.60
Feb.....	5.15- 5.40	May....	5.35- 6.00	Aug....	4.25- 4.65	Nov.....	4.35- 4.65
	5.10- 5.35		5.40- 6.15		4.10- 4.25		4.25- 4.65
	5.25- 5.50		4.60- 5.25		4.25- 4.50		4.25- 4.60
	5.25- 5.60		4.50- 5.10		4.30- 4.60		4.25- 4.75
					4.25- 4.50		4.25- 4.60
Mar.....	5.35- 5.75	June...	4.50- 5.10	Sept...	4.15- 4.25	Dec.....	4.25- 4.60
	5.75- 6.10		4.50- 5.10		4.00- 4.30		4.50- 5.00
	6.00- 6.75		5.00- 5.50		4.00- 4.50		4.60- 5.10
	6.00- 6.85		4.50- 5.15		4.00- 4.25		4.75- 5.25
	6.25- 7.00		3.75- 4.25				
						Average.	$4.9505

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FARM PRODUCTS—Concluded.

SHEEP: Wethers, plain to choice.

[Price per hundred pounds, in Chicago, on Monday of each week; quotations from the Farmers' and Drovers' Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$4.50-$5.25	Apr....	$6.00-$7.00	July...	$3.65-$4.10	Oct.....	$4.00-$4.50
	5.00- 5.50		5.50- 6.10		3.90- 4.50		4.25- 4.75
	5.00- 5.40		5.35- 6.00		4.00- 4.50		4.10- 4.50
	5.00- 5.50		5.25- 6.00		4.00- 4.40		4.15- 4.50
Feb.....	5.10- 5.40	May...	5.25- 6.00	Aug....	4.00- 4.60	Nov....	4.10- 4.50
	5.10- 5.40		5.35- 6.15		3.85- 4.15		4.00- 4.40
	5.10- 5.60		4.50- 5.10		4.00- 4.40		4.10- 4.40
	5.10- 5.60		4.40- 5.25		4.00- 4.50		4.15- 4.50
	....		....		4.00- 4.35		4.00- 4.50
Mar.....	5.25- 5.75	June..	4.25- 5.00	Sept...	4.25- 4.40	Dec.....	3.90- 4.50
	5.40- 6.10		4.25- 5.10		3.80- 4.25		4.25- 4.90
	5.75- 6.75		4.50- 5.50		3.65- 4.25		4.35- 5.00
	5.90- 6.90		4.25- 5.10		3.65- 4.10		4.50- 5.25
	6.00- 7.10		3.50- 4.00		....		....
						Average.	$4.8115

TOBACCO: Burley, dark red, good leaf.

[Price per hundred pounds, in Louisville, on Monday of each week; quotations from the Western Tobacco Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$12.00-$13.00	Apr....	$13.00-$14.00	July...	$14.50-$15.50	Oct.....	$16.00-$16.50
	12.00- 13.00		13.00- 14.00		15.00- 16.00		16.00- 16.50
	12.00- 13.00		13.00- 14.00		15.50- 16.50		16.50- 17.00
	12.00- 13.00		13.00- 14.00		16.00- 17.00		16.50- 17.00
Feb.....	12.00- 13.00	May...	13.00- 14.00	Aug....	16.00- 17.00	Nov....	16.50- 17.00
	12.00- 13.00		13.00- 14.00		16.00- 17.00		16.50- 17.00
	12.50- 13.50		13.00- 14.00		16.00- 17.00		16.75- 17.00
	13.00- 14.00		13.00- 14.00		16.00- 16.50		16.75- 17.00
	....		....		16.00- 16.50		17.50- 18.50
Mar.....	13.00- 14.00	June...	13.00- 14.00	Sept...	16.00- 16.50	Dec.....	18.00- 19.00
	13.00- 14.00		13.00- 14.00		16.00- 16.50		18.00- 19.00
	13.00- 14.00		14.00- 15.00		16.00- 16.50		18.00- 19.00
	13.00- 14.00		14.00- 15.00		16.00- 16.50		18.00- 19.00
	13.00- 14.00		14.50- 15.50		....		....
						Average.	$15.0625

WHEAT: Regular grades, cash.

[Price per bushel, in Chicago, on Tuesday of each week; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.00 -$1.01¼	Apr....	$0.89 -$0.91½	July....	$0.87 -$0.88	Oct.....	$0.97½-$1.06
	.98¾- 1.00¼		.90⅝- .91¾		.90½- 1.17		.99⅞- 1.08
	.96¾- .99⅛		.91¼- .96⅛		.90⅜- 1.19		.97½- 1.04
	.96¼- .99		.96¾- .98⅝		.88⅞- 1.16		.99⅛- 1.00½
Feb.....	.91⅞- .95	May....	1.02½- 1.03⅜	Aug....	.92½- 1.19	Nov.....	.99⅞- 1.05
	.92¾- .95		.98⅝- 1.00⅝		.92⅝- .94		1.01⅝- 1.06
	.89¼- .91		1.00¼- 1.02⅞		.90½- 1.08		1.03 - 1.08
	.93¼- .95⅞		1.02½- 1.06		.92⅝- .93½		1.02⅝- 1.08
Mar.....	.96⅝- 1.00⅜	June...	.98¾- 1.11	Sept...	.95⅝- .97	Dec.....	1.04 - 1.10
	.93⅜- .96¼		.92¾- .94½		.97⅝- .99		1.02⅝- 1.09
	.95 - .96⅜		.92⅞- .95¼		.98¾- 1.00½		.99½- 1.07
	.93⅞- .95¼		.90⅛- .91⅝		.98⅝- 1.05		1.02¾- 1.09
	.92 - .93½		(a)		.98½- 1.07		1.04⅝- 1.09
						Average.	$0.9899

a No quotation for week.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.

BEANS: Medium, choice.

Price per bushel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$2.27½-$2.30	Apr	$2.25	July	$2.35-$2.40	Oct	$2.35
Feb	2.25 - 2.27½	May	2.20	Aug	2.35- 2.40	Nov	$2.30- 2.32½
Mar	2.32½	June	$2.40- 2.45	Sept	2.35- 2.40	Dec	2.30
						Average.	$2.3198

BREAD: Crackers, oyster, in boxes.

[Price per pound, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.06½	Apr	$0.06½	July	$0.06½	Oct	$0.06½
Feb	.06½	May	.06½	Aug	.06½	Nov	.06½
Mar	.06½	June	.06½	Sept	.06½	Dec	.06½
						Average.	$0.0650

BREAD: Crackers, soda, N. B. C., in boxes.

[Price per pound, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.06½	Apr	$0.06½	July	$0.06½	Oct	$0.06½
Feb	.06½	May	.06½	Aug	.06½	Nov	.06½
Mar	.06½	June	.06½	Sept	.06½	Dec	.06½
						Average.	$0.0650

BREAD: Loaf, 1 pound after baking.

[Price per loaf, in Washington, D. C., on the first of each month. Weight before baking, 18 ounces. Price per pound (before baking), January to December, $0.0356.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.04	Apr	$0.04	July	$0.04	Oct	$0.04
Feb	.04	May	.04	Aug	.04	Nov	.04
Mar	.04	June	.04	Sept	.04	Dec	.04
						Average.	$0.0400

BREAD: Loaf, homemade.

[Price per loaf, in New York, on the first of each month. Weight before baking, 16 ounces. Price per pound (before baking), January to December, $0.04. Standard weight and standard prices charged by the Bakers' Association, which includes leading bread manufacturers in New York and Brooklyn, and one or two in New Jersey who deliver bread in Manhattan.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.04	Apr	$0.04	July	$0.04	Oct	$0.04
Feb	.04	May	.04	Aug	.04	Nov	.04
Mar	.04	June	.04	Sept	.04	Dec	.04
						Average.	$0.0400

BREAD: Loaf, Vienna.

[Price per loaf, in New York, on the first of each month. Weight before baking, 15½ ounces. Price per pound (before baking), January to December, $0.0413. Standard weight and standard prices charged by the Bakers' Association, which includes leading bread manufacturers in New York and Brooklyn, and one or two in New Jersey who deliver bread in Manhattan.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.04	Apr	$0.04	July	$0.04	Oct	$0.04
Feb	.04	May	.04	Aug	.04	Nov	.04
Mar	.04	June	.04	Sept	.04	Dec	.04
						Average.	$0.0400

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

BUTTER: Creamery, Elgin.

[Price per pound, in Elgin, Ill., on Monday of each week; quotations furnished by W. C. Willson, manager of the Elgin Dairy Report.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.29½	Apr....	$0.30	July....	$0.22	Oct.....	$0.27½
	.30		.29		.22		.27½
	.30½		.29		.22		.27½
	.32		.26½		.22		.27½
Feb.....	.33	May....	.26	Aug....	.21	Nov.....	.28
	.33½		.24		.22		.29
	.32		.22		.23		.30
	.32		.23		.23		.30
Mar.....	.31	June...	.23		.23		.30
	.29		.23	Sept...	.23	Dec.....	.30
	.29		.23		.23		.30
	.29		.23		.23½		.31
	.29½		.23		.26		.32
						Average.	$0.2692

BUTTER: Creamery, extra.

[Price per pound, in New York, on Tuesday of each week; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.30-$0.30½	Apr....	$0.30½	July....	$0.22 -$0.22½	Oct.....	$0.27½
	.31		.28		.22½		.27½
	.31		.28½		.22½		$0.26 - .26½
	.32		.26½		.22		.26 - .26½
Feb.....	.33	May....	.26½	Aug....	.21¼- .21½	Nov.....	.27 - .27½
	.34		.22½		.23		.29 - .29½
	.32		$0.21½- .21¾		.23 - .23½		.29 - .29½
	.32		.22½		.23½		.30 - .30½
Mar.....	.30	June...	.23½	Sept...	.23½	Dec.....	.30½- .31
	.28		.23½		.23½- .23¾		.30½- .31
	.28		.23½		.23½- .23¾		.31 - .31½
	.28		.22½- .22¾		.23½- .24		.31 - .31½
	.28½		.22 - .22½		.25 - .25½		.32½- .33
						Average.	$0.2711

BUTTER: Dairy, New York State, tubs and half tubs, fancy.

[Price per pound, in New York, on Tuesday of each week; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.28-$0.29	Apr....	(a)	July....	$0.21½-$0.22	Oct.....	$0.25-$0.26
	(a)		$0.27-$0.27½		.21½- .22		.25- .26
	(a)		.27- .28		.21½- .22		.25- .26
	(a)		.26		.21 - .21½		.25- .26
Feb.....	(a)	May....	.26	Aug....	.20½	Nov.....	.26- .26½
	(a)		.22		.21 - .21½		.28
	(a)		.21		.21½- .22		.28
	(a)		.22		.21½- .22		.28- .29
Mar.....	(a)	June...	.23	Sept...	.21½- .22	Dec.....	.29
	(a)		.23		.22		.29
	(a)		.23		.22 - .22½		.29
	(a)		.22½		.22 - .22½		.29
	(a)		.22		.23		.29- .30
						Average.	$0.2449

[a] No quotations for week.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

CANNED GOODS: Corn, Republic No. 2, fancy.

[Price per dozen cans, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan......	$0.90	Apr....	$0.90	July....	$0.90	Oct.....	$0.90
Feb......	.90	May....	.90	Aug....	.90	Nov.....	.90
Mar......	.90	June...	.90	Sept...	.90	Dec.....	.90
						Average.	$0.9000

CANNED GOODS: Peas, Republic No. 2, sifted.

[Price per dozen cans, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan......	$1.40	Apr....	$1.40	July ...	$1.40	Oct.....	$1.35
Feb......	1.40	May ...	1.40	Aug....	1.35	Nov.....	1.35
Mar......	1.40	June...	1.40	Sept...	1.35	Dec.....	1.40
						Average.	$1.3833

CANNED GOODS: Tomatoes, Standard New Jersey No. 3.

[Price per dozen cans, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan......	$1.10	Apr....	$1.10	July ...	$1.00	Oct.....	$1.10
Feb......	1.10	May ...	1.05	Aug....	1.10	Nov.....	1.10
Mar......	1.10	June...	1.00	Sept...	1.10	Dec.....	1.10
						Average.	$1.0791

CHEESE: New York State, full cream, large, colored, best grades.

[Price per pound, in New York, on Tuesday of each week; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan......	$0.15¾	Apr....	$0.15¼	July ...	$0.10½	Oct.....	$0.12½
	.15¾		.15		.11		.12½
	.15¾		.14½		.11½		.12½
	.15¾		.14½		.11¾		.12½
Feb......	.15¾	May ...	.14½	Aug....	.11½	Nov.....	.12½
	.15¾		.14½		.11½		$0.12¾- .13
	.15¾		.14½		$0.11½- .11¾		.13½
	.15¾		.14½		.11¾		.13½
Mar......	.15¾	June...	.14½	Sept...	.11¾	Dec.....	.14
	.15¾		.14½		.11¾		.14
	.15¾		.11½		.12		.14
	.15¾		.11¾		.12½		.14
	.15¾		.11		.12½		.14
						Average.	$0.1364

COFFEE: Rio No. 7, Brazil grades.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan......	$0.06 -$0.06¼	Apr....	$0.06 -$0.06¼	July ...	$0.06¼-$0.06½	Oct.....	$0.06¼-$0.06⅜
Feb......	.06¼- .06⅜	May ...	.06 - .06¼	Aug....	.06⅛- .06¼	Nov.....	.06⅜- .06½
Mar......	.06¼- .06⅜	June...	.06⅜- .06½	Sept...	.06 - .06⅛	Dec.....	.06½- .06⅝
						Average.	$0.0628

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

EGGS: New-laid, fancy, near-by.

[Price per dozen, in New York, on Tuesday of each week; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.32 -$0.38	Apr....	$0.17 -$0.19	July ...	$0.21-$0.25	Oct.....	$0.28-$0.37
	.28 - .34		.17 - .18½		.22- .26		.28- .38
	.26 - .30		.18 - .19½		.22- .26		.32- .40
	.25 - .30		.17½- .18½		.22- .26		.32- .40
Feb.....	.27 - .32	May ...	.17½- .18½	Aug....	.22- .27	Nov	.33- .46
	.25 - .28		.18 - .19		.22- .27		.35- .48
	.26 - .30		.19½- .21		.22- .28		.35- .50
	.24 - .30		.18 - .19		.24- .30		.35- .50
Mar.....	.24 - .27	June...	.18 - .20	Sept...	.24- .30	Dec.....	.40- .52
	.24 - .26		.18½- .21		.24- .30		.45- .55
	.17½- .20		.19 - .22		.25- .32		.43- .50
	.17 - .20		.20 - .23		.25- .32		.36- .42
	.17 - 20		.20 - .24		.27- .35		.35- .40
						Average.	$0.2788

FISH: Cod, dry, bank, large.

[Price per quintal, in Boston, on the first of each month; quotations from the Boston Herald.]

Jan.....	$7.25-$7.50	Apr....	$7.50	July ...	$7.00-$7.50	Oct.....	$7.00-$7.50
Feb.....	7.25- 7.50	May ...	$7.00- 7.50	Aug....	7.00- 7.50	Nov.....	7.00- 7.50
Mar.....	7.25- 7.50	June...	7.00- 7.50	Sept...	7.00- 7.50	Dec.....	7.00- 7.50
						Average.	$7.3021

FISH: Herring, large, Nova Scotia split.

[Price per quintal, in Boston, on the first of each month; quotations from the Boston Herald.]

Jan.....	$7.00-$7.50	Apr....	$7.00-$7.50	July....	$7.00-$7.50	Oct.....	$7.00
Feb.....	7.00- 7.50	May....	7.00- 7.50	Aug....	7.00	Nov.....	6.50
Mar.....	7.00- 7.50	June...	7.00- 7.50	Sept...	7.00	Dec.....	$6.50- 7.00
						Average.	$7.0833

FISH: Mackerel, salt, large No. 3s.

[Price per barrel, in Boston, on the first of each month.]

Jan.....	$14 00	Apr....	$12.50	July....	$10.50	Oct.....	$10.00
Feb.....	13.50	May....	11.50	Aug....	10.50	Nov.....	10.00
Mar.....	12.50	June...	11.00	Sept...	10.25	Dec.....	10.00
						Average.	$11.3542

FISH: Salmon, canned, Columbia River, 1-pound talls.

[Price per dozen cans, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan.....	$2.00	Apr....	$1.85-$2.00	July....	$1.85-$2.00	Oct.....	$1.85-$2.00
Feb.....	2.00	May....	1.85- 2.00	Aug....	1.85- 2.00	Nov.....	1.80- 1.85
Mar.....	$1.85- 2.00	June...	1.85- 2.00	Sept...	1.85- 2.00	Dec.....	1.80- 1.85
						Average.	$1.9208

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

FLOUR: Buckwheat.

[Price per 100 pounds, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$3.00-$3.10	Apr....	(a)	July....	(a)	Oct.....	$3.15-$3.25
Feb.....	3.00	May....	(a)	Aug....	(a)	Nov.....	2.75- 2.90
Mar.....	3 50	June...	(a)	Sept...	(a)	Dec.....	2.50- 2.75
						Average.	$3.0333

FLOUR: Rye.

[Price per barrel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan......	$4.85-$5.40	Apr....	$4.50-$5.20	July....	$4.40-$5.00	Oct.....	$4.00-$4.75
Feb.....	4.75- 5.35	May....	4.50- 5.10	Aug....	4.00- 4.65	Nov.....	3.75- 4.55
Mar.....	4.75- 5.35	June...	4.60- 5.15	Sept...	4.25- 4.75	Dec.....	3.60- 4.50
						Average.	$4.7375

FLOUR: Wheat, spring patents.

[Price per barrel, in New York, on Tuesday of each week; quotations furnished by the statistician of the New York Produce Exchange.]

Jan.....	$5.30-$5.85	Apr....	$4.90-$5.40	July....	$5.00-$5.45	Oct.....	$5.20-$5.70
	5.50- 5.85		4.90- 5.20		5.10- 5.65		5.20- 5.75
	5.35- 5.80		4.95- 5.40		5.20- 5.75		5.10- 5.60
	5.35- 5.80		5.10- 5.50		5.20- 5.75		5.00- 5.60
Feb.....	5.15- 5.75	May....	5.10- 5.50	Aug....	5.30- 5.90	Nov.....	5.00- 5.50
	5.15- 5.75		5.20- 5.65		5.30- 5.90		5.20- 5.75
	5.00- 5.60		5.20- 5.65		5.30- 5.90		5.20- 5.75
	5.00- 5.55		5.10- 5.60		5.30- 5.90		5.20- 5.75
Mar.....	5.20- 5.75	June...	5.15- 5.45	Sept...	5.25- 5.75	Dec.....	5.20- 5.75
	5.20- 5.75		5.00- 5.50		5.25- 5.85		5.30- 5.80
	5.10- 5.65		5.00- 5.50		5.25- 5.85		5.20- 5.75
	5.10- 5.65		5.00- 5.45		5.25- 5.85		5.20- 5.75
	5.10- 5.65		5.00- 5.45		5.25- 5.80		5.20- 5.75
						Average.	$5.4183

FLOUR: Wheat, winter straights.

[Price per barrel, in New York, on Tuesday of each week; quotations furnished by the statistician of the New York Produce Exchange.]

Jan.....	$4.35-$4.75	Apr....	$4.00-$4.35	July ...	$3.85-$4.15	Oct.....	$4.10-$4.45
	4.35- 4.75		4.00- 4.35		3.85- 4.15		4.15- 4.50
	4.35- 4.75		4.00- 4.40		3.85- 4.25		4.10- 4.50
	4.35- 4.75		4.10- 4.45		3.85- 4.20		4.10- 4.50
Feb.....	4.25- 4.55	May ...	4.10- 4.45	Aug....	3.85- 4.15	Nov.....	4.10- 4.50
	4.25- 4.55		4.15- 4.55		3.85- 4.15		4.30- 4.70
	4.15- 4.45		4.15- 4.55		3.85- 4.15		4.30- 4.70
	4.10- 4.40		4.15- 4.50		3.85- 4.15		4.40- 4.75
Mar.....	4.25- 4.50	June...	4.20- 4.55	Sept...	3.85- 4.15	Dec.....	4.40- 4.75
	4.25- 4.50		4.10- 4.35		3.85- 4.20		4.50- 4.80
	4.25- 4.50		4.00- 4.35		4.00- 4.30		4.40- 4.75
	4.25- 4.50		3.90- 4 25		4.10- 4.45		4.30- 4.70
	4.25- 4.50		3.90- 4.20		4.10- 4.45		4.30- 4.70
						Average.	$4.2909

(a) No quotations for month.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

FRUIT: Apples, evaporated, choice.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.10	Apr	$0.08½-$0.09½	July	$0.08 -$0.09	Oct	$0.07 -$0.09
Feb	.09½	May	.07¾- .09	Aug	.08 - .09	Nov	.07½- .07¾
Mar	$0.09- .09¼	June	.08½- .09½	Sept	.07½- .09	Dec	.07½- .07¾
						Average.	$0.0863

FRUIT: Currants, Amalia's, in barrels.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.06½-$0.06¾	Apr	$0.05¾-$0.06⅛	July	$0.05¾-$0.06	Oct	$0.06 -$0.06⅜
Feb	.06¼- .06½	May	.05¾- .06	Aug	.05¾- .06	Nov	.05⅞- .06
Mar	.06 - .06¼	June	.05¾- .06	Sept	.06¼- .06⅝	Dec	.05⅞- .06
						Average.	$0.0609

FRUIT: Prunes, California, 60s to 70s, in 25-pound boxes.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.06¾-$0.07	Apr	$0.05½-$0.06	July	$0.05¼-$0.05½	Oct	$0.06 -$0.06¼
Feb	.06½- .07	May	.05½- .06	Aug	.05¼- .05½	Nov	.06 - .06¼
Mar	.06 - .06¼	June	.05½- .06	Sept	.06 - .06¼	Dec	.05½- .05¾
						Average.	$0.0598

FRUIT: Raisins, California, London layer.

[Price per box, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$1.75-$1.85	Apr	$1.75-$1.85	July	$1.75-$1.85	Oct	$1.85
Feb	1.75- 1.85	May	1.75- 1.85	Aug	1.75- 1.85	Nov	(a)
Mar	1.75- 1.85	June	1.75- 1.85	Sept	1.85	Dec	(a)
						Average.	$1.8100

GLUCOSE: 42° mixing.

[Price per hundred pounds, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$2.48	Apr	$2.52	July	$2.48	Oct	$2.88
Feb	2.52	May	2.48	Aug	2.68	Nov	2.88
Mar	2.52	June	2.48	Sept	2.88	Dec	2.88
						Average.	$2.6400

[a] No quotation for month.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

LARD: Prime, contract.

[Price per pound, in New York, on Tuesday of each week; quotations furnished by the statistician of the New York Produce Exchange.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.0820–$0.0845	Apr....	$0.0845–$0.0865	July....	$0.0955–$0.0970	Oct.....	$0.1035–$0.1050
	.0800– .0830		.0845– .0860		.0945– .0970		.0960– .0980
	.0790– .0825		.0820– .0850		.0945– .0965		.0970– .0985
	.0775– .0825		.0820– .0860		.0945– .0965		.1000– .1015
Feb.....	.0755– .0790	May....	.0850– .0875	Aug....	.0965– .0990	Nov.....	.0980– .0990
	.0735– .0780		.0845– .0870		.0960– .0980		.0970– .0980
	.0715– .0765		.0850– .0875		.0935– .0960		.0960– .0975
	.0730– .0770		.0840– .0875		.0955– .0975		.0960– .0970
Mar.....	.0755– .0780	June...	.0850– .0875	Sept...	.0980– .1000	Dec.....	.0960– .0975
	.0775– .0805		.0850– .0875		.1005– .1020		.0945– .0955
	.0780– .0825		.0870– .0920		.1050– .1070		.0940– .0955
	.0800– .0820		.0900– .0925		.1065– .1075		.0950– .0970
	.0845– .0870		.0940– .0950		.1060– .1070		.0970– .0985
						Average.	$0.0908

MEAL: Corn, fine white.

[Price per bag of 100 pounds, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.45–$1.50	Apr....	$1.60	July....	$1.60–$1.65	Oct.....	$1.70
Feb.....	1.45– 1.50	May....	$1.45– 1.55	Aug....	1.65– 1.70	Nov.....	$1.70– 1.75
Mar.....	1.50	June...	1.60– 1.70	Sept...	1.75– 1.80	Dec.....	1.65– 1.70
						Average.	$1.6146

MEAL: Corn, fine yellow.

[Price per bag of 100 pounds, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.45–$1.50	Apr....	$1.60	July....	$1.60–$1.65	Oct.....	$1.70
Feb.....	1.45– 1.50	May....	$1.45– 1.55	Aug....	1.65– 1.70	Nov.....	$1.70– 1.75
Mar.....	1.50	June...	1.60– 1.70	Sept...	1.75– 1.80	Dec.....	1.65– 1.70
						Average.	$1.6146

MEAT: Bacon, short clear sides, smoked, loose.

[Price per pound, in Chicago, on Tuesday of each week; quotations from the Daily Trade Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.08⅜–$0.08½	Apr....	$0.07⅞–$0.08	July....	$0.09⅜–$0.09½	Oct.....	$0.11¼–$0.11⅜
	.07⅞– .08		.07⅞– .08		.09½– .09⅝		.10⅜– .10½
	.07¾– .07⅞		.07¾– .07⅞		.09⅝– .09¾		.10⅜– .10½
	.07¾– .07⅞		.07¾– .07⅞		.09⅝– .09¾		.10½– .10⅝
Feb.....	.07⅝– .07¾	May....	.07⅞– .08	Aug....	.09⅞– .10	Nov.....	.10½– .10⅝
	.07½– .07⅝		.07⅞– .08		.09⅞– .10		.10½– .10⅝
	.07 – .07⅛		.07¾– .07⅞		.09⅞– .10		.10½– .10⅝
	.06⅞– .07		.08 – .08⅛		.09⅞– .10		.09⅞– .10
Mar.....	.07⅛– .07¼	June...	.08⅛– .08¼	Sept...	.10¼– .10½	Dec.....	.09⅝– .09¾
	.07⅜– .07½		.08⅛– .08¼		.10½– .10⅝		.09⅜– .09½
	.07½– .07⅝		.08⅜– .08½		.11 – .11⅛		.09⅜– .09½
	.07⅝– .07¾		.08⅝– .08¾		.11⅜– .11½		.09⅜– .09½
	.07⅞– .08		.08⅞– .09		.11⅜– .11½		.09⅛– .09¼
						Average.	$0.0901

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

MEAT: Bacon, short rib sides, smoked, loose.

[Price per pound, in Chicago, on Tuesday of each week; quotations from the Daily Trade Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.08 -$0.08⅛	Apr....	$0.07½-$0.07⅝	July....	$0.09 -$0.09¼	Oct.....	$0.10⅞-$0.11
	.07⅞- .07⅞		.07⅜- .07⅝		.09⅛- .09¼		.10¼- .10⅝
	.07¾- .07⅞		.07⅜- .07⅝		.09⅛- .09¼		.10⅜- .10⅝
	.07½- .07⅞		.07⅜- .07⅝		.09⅛- .09¼		.10⅜- .10⅝
Feb.....	.07⅜- .07½	May....	.07⅜- .07½	Aug....	.09⅝- .09⅞	Nov.....	.10⅜- .10⅝
	.07 - .07⅛		.07⅜- .07½		.09⅛- .09⅞		.10 - .10⅛
	.06⅞- .07		.07⅜- .07⅝		.09⅛- .09⅞		.10 - .10⅛
	.06⅞- .06⅞		.07⅜- .07⅝		.09⅛- .09⅞		.09½- .09⅞
Mar.....	.06⅞- .07⅛	June...	.07⅝- .08	Sept...	.09⅞- .09⅞	Dec.....	.09⅜- .09⅝
	.07⅛- .07¼		.07⅝- .08		.10 - .10⅛		.09 - .09⅜
	.07 - .07¼		.08⅛- .08¼		.10⅛- .10⅞		.08⅞- .09
	.07¼- .07⅜		.08⅛- .08½		.11 - .11⅝		.08⅝- .08⅞
	.07½- .07⅝		.08⅛- .08⅜		.10⅞- .11⅝		.08⅞- .09
						Average.	$0.0870

MEAT: Beef, fresh, carcass, good native steers.

[Price per pound, in Chicago, each week; quotations from the National Provisioner.]

Jan.....	$0.09¼	Apr....	$0.10	July....	$0.11½-$0.12	Oct.....	$0.10½-$0.11½
	.09		.10		.11 - .12		.10½- .11
	.09¼		$0.10 - .10¼		.11 - .12		.10½- .11
	.09¾		.11		.10½- .11½		.10½- .11
							.10½- .11
Feb.....	.09¾	May ...	.11 - .12½	Aug....	.10½- .11	Nov.....	.10½- .11
	.09¾		.11 - .12		.10½- .11		.10½- .11
	.09¾		.10½- .11		.10½- .11		.10 - .10½
	.09¼		.10 - .10½		.10 - .10½		.10½- .11
	.09¾		.10 - .10½		.10 - .10½		
Mar.....	.09½	June...	.10 - .10½	Sept...	.10 - .11	Dec.....	.10½- .11
	.09¾		.10½- .12		.10½- .11		.11 - .12
	.09¾		.11 - .12½		.10 - .11		.11 - .12
	.10		.11 - .11½		.10 - .11		.11 - .12
						Average.	$0.1053

MEAT: Beef, fresh, native sides.

[Price per pound, in New York, on Tuesday of each week; quotations from the New York Daily Tribune.]

Jan.....	$0.07½-$0.09½	Apr....	$0.10 -$0.11	July...	$0.08½-$0.12	Oct.....	$0.07 -$0.10½
	.07½- .09½		.10 - .11½		.08½- .11½		.07½- .10½
	.07½- .09½		.09½- .11½		.08 - .11½		.07 - .10½
	.07½- .09½		.09½- .11		.08½- .11		.07 - .10½
Feb.....	.07½- .09	May...	.09½- .11	Aug....	.08½- .11	Nov....	.07 - .10½
	.07½- .09		.10 - .11½		.08 - .10½		.08 - .11
	.07½- .09		.09½- .11		.07½- .10		.07½- .10½
	.07 - .09½		.09½- .11½		.07½- .10		.07½- .10½
Mar.....	.07 - .09	June...	.09½- .11½	Sept...	.07½- .10	Dec.....	.07½- .10½
	.07 - .09		.10 - .11½		.07½- .10		.07½- .10½
	.07 - .09		.10 - .11½		.07½- .11		.08 - .10½
	.08 - .09½		.10½- .12		.07 - .10½		.08 - .10½
	.09½- .11		.08½- .12		.07 - .10½		.08 - .10½
						Average.	$0.0934

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

MEAT: Beef, salt, extra mess.

[Average weekly price per barrel in New York; quotations furnished by the statistician of the New York Produce Exchange.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$10.75	Apr....	$12.25	July...	$14.50	Oct.....	$14.75
	10.75		13.00		14.63		14.75
	10.75		13.25		14.75		14.75
	10.50		13.50		14.75		13.25
							13.25
Feb.....	10.25	May...	13.75	Aug....	14.75	Nov....	13.25
	10.25		13.75		14.75		13.25
	10.25		13.75		14.75		13.25
	10.25		13.75		14.75		13.25
	11.17		13.75		14.75		
Mar.....	11.25	June...	13.75	Sept...	14.75	Dec.....	13.25
	11.25		14.00		14.75		13.25
	11.25		14.50		14.75		13.25
	11.25		14.50		14.75		13.25
						Average.	$13.1837

MEAT: Beef, salt, hams, western.

[Price per barrel, in New York, on Tuesday of each week; quotations furnished by the statistician of the New York Produce Exchange.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$24.50-$26.50	Apr....	$26.00-$28.00	July...	$28.00-$30.00	Oct.....	$29.00-$31.00
	24.50- 26.50		26.00- 28.00		28.00- 30.00		29.00- 31.00
	24.50- 26.50		26.00- 28.00		28.00- 30.00		29.00- 31.00
	24.50- 26.50		26.00- 28.00		28.00- 30.00		29.00- 31.00
Feb.....	24.50- 26.50	May...	26.00- 28.00	Aug....	28.00- 30.00	Nov.....	28.00- 30.00
	24.50- 26.50		26.00- 28.00		28.00- 30.00		27.00- 29.00
	24.50- 26.50		26.00- 28.00		28.00- 30.00		27.00- 29.00
	24.50- 26.50		26.00- 28.00		28.00- 30.00		26.50- 28.50
Mar.....	25.00- 27.00	June...	26.50- 28.50	Sept...	29.00- 31.00	Dec.....	26.00- 28.00
	25.00- 27.00		26.50- 28.50		29.00- 31.00		26.00- 28.50
	25.00- 27.00		26.50- 28.50		29.00- 31.00		26.00- 28.50
	26.00- 28.00		27.00- 29.00		29.00- 31.00		26.00- 28.50
	26.00- 28.00		27.00- 29.00		29.00- 31.00		26.00- 28.50
						Average.	$27.7115

MEAT: Hams, smoked, loose.

[Price per pound, in Chicago, on Tuesday of each week; quotations from the Daily Trade Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.09¾-$0.10¾	Apr....	$0.10½-$0.10¾	July...	$0.12¾-$0.13	Oct.....	$0.12⅞-$0.13⅛
	.09½- .10¼		.10½- .10¾		.12½- .13¼		.12⅝- .12⅞
	.09½- .10¼		.10½- .10¾		.12½- .13¼		.12⅜- .12⅝
	.09½- .10¼		.10½- .10¾		.12½- .13¼		.11⅞- .11⅞
Feb.....	.09½- .10	May...	.10½- .10¾	Aug....	.12½- .13¼	Nov.....	.11⅝- .11⅞
	.09¼- .09¾		.10½- .10¾		.12½- .13¼		.11 - .11½
	.09¼- .09¾		.10¾- .11		.12½- .13		.11 - .11½
	.09¼- .09¾		.10¾- .11		.12⅜- .12⅞		.10⅞- .11⅜
Mar.....	.09¼- .09¾	June...	.11 - .11½	Sept...	.12¼- .12¾	Dec.....	.10½- .10⅞
	.09½- .10		.11 - .11½		.12¼- .12¾		.10⅝- .10⅞
	.09½- .10		.11¼- .11¾		.12¼- .12¾		.10¼- .10½
	.09½- .09¾		.11¾- .12		.12½- .13		.10 - .10¼
	.10¼- .10½		.12¼- .12¾		.12¾- .13⅛		.10¼- .10½
						Average.	$0.1125

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

MEAT: Mutton, dressed.

[Price per pound, in New York, on Tuesday of each week; quotations from the New York Daily Tribune.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.07-$0.09½	Apr....	$0.11 -$0.12½	July...	$0.07-$0.09½	Oct.....	$0.06 -$0.09
	.07- .10		.10 - .12		.07- .09½		.05 - .08½
	.09- .10½		.10 - .12		.07- .09		.06 - .08½
	.08- .10		.10½- .12½		.07- .09		.05 - .08
Feb.....	.08- .10½	May...	.10 - .12½	Aug....	.07- .09½	Nov.....	.05 - .08½
	.08- .10½		.10 - .12		.07- .09		.05½- .08½
	.08- .10½		.09 - .11		.07- .09		.05 - .08½
	.08- .10½		.08 - .10		.06- .09		.05 - .08
Mar.....	.08- .12½	June...	.08 - .10	Sept...	.05- .09	Dec.....	.06 - .09
	.08- .10½		.09 - .11		.05- .08		.06 - .09
	.09- .12		.09 - .11		.05- .08		.06 - .09
	.10- .12½		.08 - .10½		.05- .08		.05 - .08
	.12- .14		.07 - .09½		.05- .08		.06 - .09
						Average.	$0.0863

MEAT: Pork, salt, mess, old to new.

[Price per barrel, in New York, on Tuesday of each week; quotations furnished by the statistician of the New York Produce Exchange.]

Jan.....	$14.50-$15.25	Apr....	$15.25-$16.75	July...	$17.00-$17.25	Oct.....	$17.50-$17.75
	14.50- 15.25		15.25- 15.75		17.75- 18.00		17.50- 17.75
	14.50- 15.25		14.50- 15.50		17.50- 17.75		16.00- 16.50
	14.50- 15.25		14.50- 15.50		17.50- 17.75		16.00- 16.50
Feb.....	14.00- 14.50	May...	14.50- 15.50	Aug....	17.50- 17.75	Nov.....	16.00- 16.75
	14.00- 14.50		14.50- 15.50		17.50- 17.75		16.00- 16.75
	13.75- 14.25		14.50- 15.50		17.00- 17.25		16.00- 16.75
	13.75- 14.25		14.50- 15.50		17.00- 17.25		16.00- 16.75
Mar.....	14.00- 14.50	June...	14.50- 15.50	Sept...	16.75- 17.25	Dec.....	16.00- 16.75
	14.00- 14.75		14.50- 15.50		16.75- 17.25		16.00- 16.75
	14.00- 14.75		15.50- 15.75		17.00- 17.25		16.50- 17.00
	14.00- 14.75		16.00- 16.25		17.50- 17.75		16.50- 17.00
	15.50- 16.00		16.25- 16.50		17.50- 17.75		16.50- 17.00
						Average.	$15.9736

MILK: Fresh.

[Average monthly exchange price per quart; net price at shipping stations subject to a freight rate to New York of 26 cents per can of 40 quarts; quotations from the Milk Reporter.]

Jan.....	$0.0400	Apr....	$0.0313	July....	$0.0250	Oct......	$0.0375
Feb.....	.0375	May....	.0262	Aug....	.0300	Nov.....	.0383
Mar.....	.0350	June...	.0225	Sept...	.0313	Dec.....	.0400
						Average.	$0.0329

MOLASSES: New Orleans, open kettle.

[Price per gallon, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan.....	$0.34-$0.42	Apr....	$0.28-$0.42	July....	$0.28-$0.42	Oct.....	$0.28-$0.42
Feb.....	.34- .42	May....	.28- .42	Aug....	.28- .42	Nov.....	.28- .42
Mar.....	.28- .42	June...	.28- .42	Sept....	.28- .42	Dec.....	.28- .42
						Average.	$0.3550

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

POULTRY: Dressed, fowls, western, dry picked.

[Price per pound, in New York, each week; quotations from the National Provisioner.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.12½	Apr....	$0.14½	July....	$0.13	Oct.....	$0.15
	.13½		.14½		.13		.15
	$0.13½- .14		.15		.14		.15
	.13		.14½		.14½		$0.13½- .14
							.13 - .14
Feb.....	.13	May....	.13½	Aug....	.14½	Nov.....	.13½- .14
	.13½		.14		.13½		.13½- .14
	.13½		.14½		.13½		.13 - .14
	.13½		.14		.14½		.13 - .14
	.14		$0.13½- .14		.13½		
Mar.....	.13½	June...	.14	Sept....	.14	Dec.....	.13
	.13½		.14		.14		.13½- .14
	.13½		.13½		.15		.13½- .14
	.14½		.13½		.15½		.13½- .14
						Average.	$0.1389

RICE: Domestic, choice, head.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan.....	$0.05⅞-$0.06½	Apr....	$0.05⅞-$0.06½	July....	$0.06¼-$0.06½	Oct.....	$0.06⅛-$0.06⅜
Feb.....	.05⅞- .06½	May....	.05⅞- .06½	Aug....	.06⅜- .06⅝	Nov.....	.06 - .06⅜
Mar.....	.05⅞- .06½	June...	.05⅞- .06½	Sept....	.06⅜- .06⅝	Dec.....	.06 - .06⅜
						Average.	$0.0624

SALT: American, medium.

[Price per barrel, in Chicago, each week; quotations furnished by the secretary of the Chicago Board of Trade.]

Jan.....	$0.82	Apr....	$0.74	July....	$0.74	Oct.....	$0.85
	.76		.74		.74		.85
	.76		.74		.80		.85
	.76		.74		.80		.85
	.76				.80		.85
Feb.....	.76	May....	.71	Aug....	.80	Nov.....	.85
	.76		.71		.80		.85
	.76		.71		.85		.85
	.76		.71		.85		.85
			.71				
Mar.....	.74	June...	.71	Sept...	.85	Dec.....	.85
	.74		.71		.85		.85
	.74		.71		.85		.85
	.74		.71		.85		.85
						Average.	$0.7854

SODA: Bicarbonate of, American.

[Price per pound in New York on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.0130	Apr....	$0.0115	July ...	$0.0100	Oct.....	$0.0100
Feb.....	.0130	May ...	.0115	Aug....	.0100	Nov	.0100
Mar.....	.0115	June...	.0115	Sept...	.0100	Dec.....	.0100
						Average.	$0.0110

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

SPICES: Pepper, Singapore.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.08¼–$0.08½	Apr....	$0.07½–$0.07¾	July...	$0.06⅝–$0.06¾	Oct.....	$0.06½–$0.06¾
Feb.....	.07¾– .08	May...	.07 – .07¼	Aug....	.06¾– .07	Nov....	.06 – .06¼
Mar.....	.07¾– .08	June...	.07 – .07¼	Sept...	.07 – .07¼	Dec.....	.06¼– .06½
						Average.	$0.0715

STARCH: Pure corn, for culinary purposes.

[Price per pound, in New York, on the first of each month; quotations from the Merchants' Review.]

Jan.....	$0.06	Apr....	$0.06	July...	$0.05½	Oct.....	$0.05½
Feb.....	.06	May...	.06	Aug....	.05½	Nov....	.05½
Mar.....	.06	June...	.06	Sept...	.05½	Dec.....	.05½
						Average.	$0.0575

SUGAR: 89° fair refining.

[Price per pound, in New York, on Thursday of each week, including import duty of 1.44 cents per pound; quotations from Willett & Gray's Weekly Statistical Sugar Trade Journal.]

Jan.....	$0.0335	Apr....	$0.0386	July...	$0.0389	Oct.....	$0.0348
	.0344		.0386		.0389		.0648
	.0342		.0386		.0386		.0346
	.0330		.0399		.0375		.0354
	.0325		.0392		.0375		.0348
Feb.....	.0325	May...	.0386	Aug....	.0362½	Nov....	.0345
	.0317		.0386		.0358		.0344
	.0317		.0374		.0350		.0344
	.0338½		.0377		.0340		.0344
Mar.....	.0339	June...	.0386	Sept...	.0346	Dec.....	.0342
	.0355		.0390		.0340		.0336
	.0362½		.0381		.0345		.0327
	.0386		.0375		.0348		.0317
	....		....		....		.0317
						Average.	$0.03563

SUGAR: 96° centrifugal.

[Price per pound, in New York, on Thursday of each week, including import duty of 1.95 cents per pound; quotations from Willett & Gray's Weekly Statistical Sugar Trade Journal.]

Jan.....	$0.0385	Apr....	$0.0436	July...	$0.0439	Oct.....	$0.0398
	.0394		.0436		.0439		.0398
	.0392		.0436		.0436		.0396
	.0380		.0449		.0425		.0404
	.0375		.0442		.0425		.0398
Feb.....	.0375	May...	.0436	Aug....	.0412½	Nov....	.0395
	.0367		.0436		.0408		.0394
	.0367		.0424		.0408		.0394
	.0388½		.0427		.0390		.0394
Mar.....	.0389	June...	.0436	Sept...	.0396	Dec.....	.0392
	.0405		.0440		.0390		.0386
	.0412½		.0431		.0395		.0377
	.0436		.0425		.0398		.0367
	....		....		....		.0367
						Average.	$0.04064

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Continued.

SUGAR: Granulated, in barrels.

[Price per pound, in New York, on Thursday of each week, including import duty of 1.95 cents per pound; quotations from Willett & Gray's Weekly Statistical Sugar Trade Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.0455	Apr....	$0.0525	July ...	$0.0525	Oct.....	$0.0495
	.0475		.0525		.0525		.0485
	.0475		.0535		.0525		.0485
	.0475		.0535		.0525		.0475
	.0475		.0535		.0515		.0485
Feb.....	.0475	May ...	.0515	Aug....	.0505	Nov.....	.0475
	.0465		.0535		.0505		.0460
	.0455		.0535		.0505		.0455
	.0465		.0520		.0475		.0455
Mar.....	.0475	June...	.0520	Sept ...	.0495	Dec.....	.0455
	.0485		.0520		.0495		.0455
	.0505		.0525		.0495		.0460
	.0525		.0525		.0495		.0450
							.0450
						Average.	$0.04940

TALLOW.

[Price per pound, in New York, on Tuesday of each week; quotations furnished by the statistician of the New York Produce Exchange.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.05¼	Apr....	$0.05¼	July ...	$0.05 7/16	Oct.....	$0.06
	.05½		.05⅜		.05½		.06
	.05½		.05½		.05½		.06
	.05½		.05½		.05½		.06
Feb.....	.05¼	May ...	.05½	Aug....	.05 7/16	Nov	.05⅞
	.05¼		.05½		.05 7/16		.05⅞
	.05¼		.05¼		.05 7/16		.05¾
	.05¼		.05⅜		.05⅝		.05¾
Mar.....	.05¼	June...	.05⅜	Sept...	.05⅝	Dec.....	.05¾
	.05		.05⅜		.05⅝		.05⅝
	.05⅛		.05⅜		.05⅝		.05⅝
	.05¼		.05⅜		.05¾		.05¾
	.05¼		.05⅜		.06		.05⅞
						Average.	$0.0551

TEA: Formosa, fine.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.22-$0.24	Apr....	$0.22-$0.24	July ...	$0.20-$0.21	Oct.....	$0.20-$0.21
Feb.....	.22- .24	May ...	.20- .21	Aug ...	.20- .21	Nov.....	.20- .21
Mar.....	.22- .24	June...	.20- .21	Sept ...	.20- .21	Dec.....	.20- .21
						Average.	$0.2133

VEGETABLES, FRESH: Cabbage.

[Price per ton, in New York, each week; quotations from the Producer's Price Current.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$9.00-$12.00	Apr....	$7.00-$12.00	July ...	(a)	Oct.....	$15.00-$18.00
	9.00- 12.00		6.00- 10.00		(a)		15.00- 18.00
	9.00- 12.00		7.00- 14.00		(a)		20.00- 24.00
	9.00- 11.00		6.00- 9.00		(a)		20.00- 25.00
							20.00- 25.00
Feb.....	8.00-10.00	May....	4.00- 8.00	Aug....	(a)	Nov.....	20.00- 25.00
	8.00-10.00		(a)		(a)		20.00- 25.00
	10.00-14.00		(a)		(a)		18.00- 25.00
	10.00-14.00		(a)		(a)		18.00- 22.00
	10.00-11.00		(a)		(a)		
Mar.....	9.00-11.00	June...	(a)	Sept...	(a)	Dec.....	20.00- 24.00
	6.00-10.00		(a)		(a)		30.00- 35.00
	6.00-10.00		(a)		$16.00-$20.00		30.00- 33.00
	6.00-10.00		(a)		$16.00- 20.00		30.00- 33.00
						Average.	$15.4394

a No quotation for week.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FOOD, ETC.—Concluded.

VEGETABLES, FRESH: Onions.

[Price per barrel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$2.50-$4.50	Apr....	(a)	July....	(a)	Oct.....	$2.50-$3.00
Feb.....	3.00- 5.50	May...	(a)	Aug....	(a)	Nov.....	1.50- 3.00
Mar.....	5.00- 6.00	June...	(a)	Sept...	$2.50-$3.00	Dec.....	2.50- 5.00
						Average.	$3.5357

VEGETABLES, FRESH: Potatoes, white, good to fancy.

[Price per bushel, in Chicago, weekly range; quotations furnished by the secretary of the Chicago Board of Trade.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.52-$0.62	Apr....	$0.62-$0.71	July...	$0.95-$1.10	Oct.....	$0.60-$0.81
	.52- .60		.60- .71		.95- 1.10		.55- .70
	.55- .65		.60- .76		.85- 1.05		.50- .60
	.57- .65		.62- .77		.70- 1.00		.52- .62
							.56- .67
Feb.....	.58- .70	May...	.62- .80	Aug....	.70- .83	Nov.....	.57- .68
	.64- .72		.62- .78		.73- .90		.60- .70
	.64- .72		.60- .77		.80- .90		.60- .71
	.62- .72		.57- .70		.60- .83		.60- .70
	.62- .73		.50- .64		.58- .75		
Mar.....	.65- .75	June...	.53- .78	Sept...	.65- .72	Dec.....	.60- .72
	.62- .73		.65- .96		.68- .78		.60- .75
	.62- .74		[b] .90- 1.50		.66- .76		.60- .77
	.62- .71		.95- 1.45		.58- .70		.62- .72
						Average.	$0.7119

VINEGAR: Cider, Monarch, in barrels.

[Price per gallon, in New York, on the first of each month; quotations from the Merchants' Review.]

Month	Price	Month	Price	Month	Price	Month	Price
Jan.....	$0.18	Apr....	$0.18	July...	$0.19	Oct.....	$0.19
Feb.....	.18	May...	.18	Aug....	.19	Nov.....	.19
Mar.....	.18	June...	.18	Sept...	.19	Dec.....	.18
						Average.	$0.1842

CLOTHS AND CLOTHING.

BAGS: 2-bushel, Amoskeag.

[Price per bag on the first of each month.]

Month	Price	Month	Price	Month	Price	Month	Price
Jan.....	$0.19½	Apr....	$0.18½	July...	$0.18½	Oct.....	$0.18½
Feb.....	.21	May...	.18½	Aug....	.18½	Nov.....	.18½
Mar.....	.18½	June...	.18½	Sept...	.18½	Dec.....	.18½
						Average.	$0.1879

BLANKETS: 11-4, 5 pounds to the pair, all wool.

[Average price per pound.]

Year.	Price.
1908..	$0.95

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[a] No quotation for month.

[b] New crop.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

BLANKETS, COTTON: 10-4, 2 pounds to the pair, 54x74.

[Price per pair on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.51½	Apr....	$0.50	July...	$0.50	Oct.....	$0.50
Feb.....	.51½	May...	.50	Aug....	.50	Nov....	.50
Mar.....	.51½	June...	.50	Sept...	.50	Dec.....	.50
						Average.	$0.5040

BOOTS AND SHOES: Men's brogans, split.

[Price per pair on the first of each month.]

Jan.....	$1.15	Apr....	$1.07½	July...	$1.12½	Oct.....	$1.17½
Feb.....	1.10	May...	1.10	Aug....	1.15	Nov....	1.20
Mar.....	1.07½	June...	1.12½	Sept...	1.15	Dec.....	1.20
						Average.	$1.1354

BOOTS AND SHOES: Men's vici calf shoes, Blucher bal., vici calf top, single sole.

[Price per pair on the first of each month.]

Jan.....	$2.80	Apr....	$2.80	July...	$2.80	Oct.....	$2.80
Feb.....	2.80	May...	2.80	Aug....	2.80	Nov....	2.80
Mar.....	2.80	June...	2.80	Sept...	2.80	Dec.....	2.80
						Average.	$2.8000

BOOTS AND SHOES: Men's vici kid shoes, Goodyear welt.

[Price per pair on the first of each month.]

Jan.....	$2.50	Apr....	$2.50	July...	$2.50	Oct.....	$2.50
Feb.....	2.50	May...	2.50	Aug....	2.50	Nov....	2.50
Mar.....	2.50	June...	2.50	Sept...	2.50	Dec.....	2.50
						Average.	$2.5000

BOOTS AND SHOES: Women's solid grain shoes, leather, polish or polka.

[Price per pair on the first of each month.]

Jan.....	$0.97½	Apr....	$0.95	July...	$0.95	Oct.....	$1.00
Feb.....	.97½	May...	.92½	Aug....	.95	Nov....	1.02½
Mar.....	.95	June...	.92½	Sept...	.97½	Dec.....	1.02½
						Average.	$0.9688

BROADCLOTHS: First quality, black, 54-inch, made from XXX wool.

[Price per yard on the first of each month.]

Jan.....	$2.02	Apr....	$2.02	July...	$2.02	Oct.....	$1.98
Feb.....	2.02	May...	2.02	Aug....	1.98	Nov....	1.98
Mar.....	2.02	June...	2.02	Sept...	1.98	Dec.....	1.98
						Average.	$2.0030

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

CALICO: American standard prints, 64x64, 7 yards to the pound.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.0665	Apr....	$0.0570	July...	$0.0451	Oct.....	$0.0475
Feb.....	.0570	May...	.0570	Aug....	.0475	Nov....	.0475
Mar.....	.0570	June...	.0451	Sept...	.0475	Dec.....	.0475
						Average.	$0.0519

CARPETS: Brussels, 5-frame, Bigelow.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.2480	Apr....	$1.2480	July....	$1.1760	Oct.....	$1.1760
Feb.....	1.2480	May....	1.1760	Aug....	1.1760	Nov.....	1.1760
Mar.....	1.2480	June...	1.1760	Sept...	1.1760	Dec.....	1.1760
						Average.	$1.2000

CARPETS: Ingrain, 2-ply, Lowell.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.5760	Apr....	$0.5760	July....	$0.5520	Oct.....	$0.5280
Feb.....	.5760	May....	.5520	Aug....	.5520	Nov.....	.5280
Mar.....	.5760	June...	.5520	Sept...	.5520	Dec.....	.5280
						Average.	$0.5540

CARPETS: Wilton, 5-frame, Bigelow.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$2.2800	Apr....	$2.2800	July....	$2.1840	Oct.....	$2.1840
Feb.....	2.2800	May....	2.1840	Aug....	2.1840	Nov.....	2.1840
Mar.....	2.2800	June...	2.1840	Sept...	2.1840	Dec.....	2.1840
						Average.	$2.2160

COTTON FLANNELS: 2¾ yards to the pound.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.09	Apr....	$0.08¾	July....	$0.08¼	Oct.....	$0.07¾
Feb.....	.09	May....	.08½	Aug....	.08¼	Nov.....	.07½
Mar.....	.08¾	June...	.08½	Sept...	.07¾	Dec.....	.07½
						Average.	$0.0829

COTTON FLANNELS: 3½ yards to the pound.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.07¼	Apr....	$0.07¼	July....	$0.06¾	Oct.....	$0.06¾
Feb.....	.07¼	May....	.07	Aug....	.06¾	Nov.....	.06¾
Mar.....	.07¼	June...	.07	Sept...	.06¾	Dec.....	.06¾
						Average.	$0.0696

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

COTTON THREAD: 6-cord, 200-yard spools, J. & P. Coats.

[Price per spool, freight paid, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.04508	Apr....	$0.04018	July....	$0.04018	Oct.....	$0.04018
Feb.....	.04508	May....	.04018	Aug....	.04018	Nov.....	.03920
Mar.....	.04018	June...	.04018	Sept...	.04018	Dec.....	.03920
						Average.	$0.040833

COTTON YARNS: Carded, white, mule-spun, northern, cones, 10/1.

[Price per pound on the first of each month.]

Jan.....	$0.20	Apr....	$0.18¼	July....	$0.17	Oct.....	$0.16¾
Feb.....	.19½	May....	.17¾	Aug....	.17	Nov.....	.17¼
Mar.....	.19	June...	.17	Sept....	.16¾	Dec.....	.17
						Average.	$0.1777

COTTON YARNS: Carded, white, mule-spun, northern, cones, 22/1.

[Price per pound on the first of each month.]

Jan.....	$0.23½	Apr....	$0.19¼	July....	$0.20	Oct.....	$0.21¼
Feb.....	.21¾	May....	.20	Aug....	.21½	Nov.....	.21
Mar.....	.23	June...	.19¾	Sept...	.21	Dec.....	.20½
						Average.	$0.2104

DENIMS: Amoskeag.

[Price per yard on the first of each month.]

Jan.....	$0.12½	Apr....	$0.12	July....	$0.11	Oct.....	$0.11
Feb.....	.12½	May....	.12	Aug....	.11	Nov.....	.11
Mar.....	.12½	June...	.11	Sept...	.11	Dec.....	.11¾
						Average.	$0.1160

DRILLINGS: Brown, Pepperell.

[Price per yard on the first of each month.]

Jan.....	$0.07¼	Apr....	$0.07	July....	$0.07	Oct.....	$0.07
Feb.....	.07¼	May....	.07	Aug....	.07	Nov.....	.07
Mar.....	.07¼	June...	.07	Sept...	.07	Dec.....	.07
						Average.	$0.0706

DRILLINGS: 30-inch, Stark A.

[Average monthly price per yard.]

Jan.....	$0.0772	Apr....	$0.0688	July....	$0.0717	Oct.....	$0.0705
Feb.....	.0786	May....	.0726	Aug....	.0698	Nov.....	.0698
Mar.....	.0746	June...	.0693	Sept...	.0695	Dec.....	.0691
						Average.	$0.0718

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

FLANNELS: White, 4-4, Ballard Vale No. 3.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.4687	Apr	$0.4687	July	$0.4557	Oct	$0.4557
Feb	.4687	May	.4687	Aug	.4557	Nov	.4557
Mar	.4687	June	.4557	Sept	.4557	Dec	.4557
						Average	$0.4611

GINGHAMS: Amoskeag.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.06	Apr	$0.06	July	$0.05	Oct	$0.05
Feb	.05¾	May	.06	Aug	.05	Nov	.05½
Mar	.06	June	.05	Sept	.05	Dec	.05½
						Average	$0.0548

GINGHAMS: Lancaster.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.06¼	Apr	$0.06¼	July	$0.05	Oct	$0.06
Feb	.06¼	May	.06¼	Aug	.05	Nov	.05¾
Mar	.06¼	June	.05	Sept	.05	Dec	.05¾
						Average	$0.0573

HORSE BLANKETS: 6 pounds each, all wool.

[Average price per pound.]

Year.	Price.
1908	$0.72½

HOSIERY: Men's cotton half hose, seamless, fast black, 20 to 22 ounce, 160 needles, single thread, carded yarn.

[Price per dozen pairs on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.75	Apr	$0.75	July	$0.75	Oct	$0.75
Feb	.75	May	.75	Aug	.75	Nov	.75
Mar	.75	June	.75	Sept	.75	Dec	.75
						Average	$0.7500

HOSIERY: Women's cotton hose, high-spliced heel, double sole, full-fashioned, combed peeler yarn.

[Price per dozen pairs maintained throughout the year.]

Year.	Price.
1908	$1.77½

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

HOSIERY: Women's cotton hose, seamless, fast black, 26-ounce, 176 needles, single thread, carded yarn.

[Price per dozen pairs on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.80	Apr....	$0.80	July...	$0.80	Oct.....	$0.80
Feb.....	.80	May...	.80	Aug....	.80	Nov....	.80
Mar.....	.80	June...	.80	Sept...	.80	Dec.....	.80
						Average.	$0.8000

LEATHER: Chrome calf, glazed finish, B grade.

[Price per square foot on the first of each month in the general market; quotations from the Shoe and Leather Reporter.]

Jan.....	$0.22-$0.23	Apr....	$0.22-$0.23	July...	$0.21-$0.22	Oct.....	$0.21-$0.22
Feb.....	.22- .23	May...	.21- .22	Aug....	.21- .22	Nov....	.21- .22
Mar.....	.22- .23	June...	.21- .22	Sept...	.21- .22	Dec.....	.21- .22
						Average.	$0.2183

LEATHER: Harness, oak, packers' hides, heavy No. 1.

[Price per pound on the first of each month in the general market; quotations from the Shoe and Leather Reporter.]

Jan.....	$0.35-$0.37	Apr....	$0.33-$0.36	July....	$0.33-$0.36	Oct.....	$0.35-$0.37
Feb.....	.33- .36	May....	.33- .36	Aug....	.33- .36	Nov.....	.35- .37
Mar.....	.33- .36	June...	.33- .36	Sept....	.33- .36	Dec.....	.36- .38
						Average.	$0.3508

LEATHER: Sole, hemlock, Buenos Aires and Montana, middle weights, first quality.

[Price per pound on the first of each month in the general market; quotations from the Shoe and Leather Reporter.]

Jan.....	$0.26-$0.27	Apr....	$0.25	July....	$0.24	Oct.....	$0.25-$0.26
Feb.....	.25	May....	.24	Aug....	$0.25- .26	Nov.....	.25- .26
Mar.....	.25	June...	.24	Sept...	.25- .26	Dec.....	.25- .26
						Average.	$0.2508

LEATHER: Sole, oak, scoured backs, heavy No. 1.

[Price per pound on the first of each month in the general market; quotations from the Shoe and Leather Reporter.]

Jan.....	$0.37-$0.40	Apr....	$0.36-$0.38	July....	$0.37-$0.38	Oct.....	$0.38
Feb.....	.37- .40	May....	.37- .38	Aug....	.38	Nov.. ..	.38
Mar.....	.37- .39	June...	.37- .38	Sept...	.38	Dec.....	$0.39- .40
						Average.	$0.3800

LINEN SHOE THREAD: 10s, Barbour.

[Price per pound on the first of each month.]

Jan.....	$0.8930	Apr....	$0.8930	July....	$0.8930	Oct.....	$0.8930
Feb.....	.8930	May....	.8930	Aug....	.8930	Nov.....	.8930
Mar.....	.8930	June...	.8930	Sept...	.8930	Dec.....	.8930
						Average.	$0.8930

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

OVERCOATINGS: Chinchilla, cotton warp, C. C. grade.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.45½	Apr....	$0.44	July....	$0.43	Oct.....	$0.42½
Feb.....	.44	May....	.44	Aug....	.42½	Nov.....	.42½
Mar.....	.44	June...	.44	Sept....	.43	Dec.....	.42½
						Average.	$0.4346

OVERCOATINGS: Covert cloth, light weight, staple goods.

[Price per yard maintained throughout the year.]

Year.	Price.
1908..	$2.2568

OVERCOATINGS: Kersey, standard, 28-ounce.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.85	Apr....	$1.85	July....	$1.85	Oct.....	$1.85
Feb.....	1.85	May....	1.85	Aug....	1.85	Nov.....	1.85
Mar.....	1.85	June...	1.85	Sept....	1.85	Dec.....	1.85
						Average.	$1.8500

PRINT CLOTHS: 28-inch, 64 by 64.

[Average weekly price per yard.]

Jan......	$0.0425	Apr....	$0.0325	July....	$0.0325	Oct.....	$0.0300
	.0425		.0325		.0325		.0300
	.0400		.0325		.0325		.0300
	.0400		.0325		.0325		.0312½
							.0325
Feb.....	.0400	May....	.0325	Aug....	.0318¾	Nov.....	.0325
	.0387½		.0312½		.0312½		.0325
	.0387½		.0312½		.0300		.0337½
	.0362½		.0325		.0306¼		.0337½
	.0362½		.0325		.0300		
Mar.....	.0362½	June...	.0325	Sept...	.0300	Dec.....	.0343¾
	.0350		.0325		.0300		.0343¾
	.0337½		.0325		.0300		.0343¾
	.0337½		.0325		.0300		.0343¾
						Average.	$0.033486

SHEETINGS: Bleached, 9-4, Atlantic.

[Average monthly price per yard.]

Jan.....	$0.2780	Apr....	$0.2561	July...	(a)	Oct.....	$0.2040
Feb.....	.2779	May...	.2586	Aug....	$0.2130	Nov.....	.1977
Mar.....	.2779	June...	.2578	Sept...	.2060	Dec.....	.2021
						Average.	$0.2390

[a] No quotation for month.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

SHEETINGS: Bleached, 10-4, Pepperell.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.30	Apr....	$0.25	July....	$0.23	Oct.....	$0.23
Feb.....	.25	May....	.25	Aug....	.23	Nov.....	.24
Mar.....	.25	June...	.23	Sept...	.23	Dec.....	.24
						Average.	$0.2442

SHEETINGS: Bleached, 10-4, Wamsutta S. T.

[Price per yard on the first of each month.]

Jan.....	$0.31½	Apr....	$0.30	July....	$0.26¼	Oct.....	$0.26¼
Feb.....	.30	May....	.30	Aug....	.26¼	Nov.....	.26¼
Mar.....	.30	June...	.26¼	Sept...	.26¼	Dec.....	.26¼
						Average.	$0.2794

SHEETINGS: Brown, 4-4, Indian Head.

[Price per yard on the first of each month.]

Jan.....	$0.08½	Apr....	$0.08	July....	$0.07½	Oct.....	$0.07½
Feb.....	.08½	May....	.08	Aug....	.07½	Nov.....	.07½
Mar.....	.08	June...	.07½	Sept...	.07½	Dec.....	.07½
						Average.	$0.0779

SHEETINGS: Brown, 4-4, Lawrence L. L., 4 yards to the pound.

[Price per yard on the first of each month.]

Jan.....	$0.06	Apr....	$0.05¼	July....	$0.04⅞	Oct.....	$0.04⅞
Feb.....	.05¾	May....	.05	Aug....	.05	Nov.....	.05
Mar.....	.05½	June...	.05	Sept...	.05	Dec.....	.05
						Average.	$0.0519

SHEETINGS: Brown, 4-4, Pepperell R.

[Price per yard on the first of each month.]

Jan.....	$0.07¼	Apr....	$0.07	July....	$0.06¾	Oct.....	$0.06¾
Feb.....	.07	May....	.06½	Aug....	.06¾	Nov.....	.06¾
Mar.....	.07	June...	.06¾	Sept...	.06¾	Dec.....	.06¾
						Average.	$0.0683

SHIRTINGS: Bleached, 4-4, Fruit of the Loom.

[Price per yard on the first of each month.]

Jan.....	$0.12	Apr....	$0.09½	July....	$0.08½	Oct.....	$0.08½
Feb.....	.09½	May....	.09½	Aug....	.08½	Nov.....	.08½
Mar.....	.09½	June...	.08½	Sept...	.08½	Dec.....	.08½
						Average.	$0.0913

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

SHIRTINGS: Bleached, 4-4, Lonsdale.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.10	Apr....	$0.09¼	July....	$0.08¼	Oct.....	$0.08¼
Feb.....	.09¼	May....	.09¼	Aug....	.08½	Nov.....	.08¼
Mar.....	.09¼	June...	.08	Sept...	.08¼	Dec.....	.08¼
						Average.	$0.0873

SHIRTINGS: Bleached, 4-4, Wamsutta <o> XX.

[Price per yard on the first of each month.]

Jan.....	$0.12½	Apr....	$0.12½	July....	$0.10¼	Oct.....	$0.10¼
Feb.....	.12½	May....	.12½	Aug....	.10¼	Nov.....	.10¼
Mar.....	.12½	June...	.10¼	Sept...	.10¼	Dec.....	.10¼
						Average.	$0.1119

SHIRTINGS: Bleached, 4-4, Williamsville A1.

[Price per yard on the first of each month.]

Jan.....	$0.12	Apr....	$0.10	July....	$0.08¾	Oct.....	$0.08¾
Feb.....	.10	May....	.08¾	Aug....	.08¾	Nov.....	.09
Mar.....	.10	June...	.08¾	Sept...	.08¾	Dec....	.09
						Average.	$0.0938

SILK: Raw, Italian, classical.

[Net cash price per pound, in New York, on the first of each month; quotations from the American Silk Journal.]

Jan.....	$5.0490-$5.0985	Apr....	$3.6630-$3.7125	July....	$3.9600-$4.0095	Oct.....	$4.2075-$4.3065
Feb.....	4.3560- 4.4055	May....	3.8115- 3.8610	Aug....	4.1085- 4.2075	Nov.....	4.1580- 4.2570
Mar.....	3.9600- 4.0095	June...	3.8610- 3.9105	Sept...	4.1580- 4.2570	Dec.....	4.4550- 4.5540
						Average.	$4.1807

SILK: Raw, Japan, Kansai No. 1.

[Net cash price per pound, in New York, on the first of each month, quotations from the American Silk Journal.]

Jan.....	$4.0255-$4.0740	Apr....	$3.5405-$3.5890	July....	$3.9770-$4.0255	Oct.....	$4.0255-$4.0740
Feb.....	4.0256- 4.0740	May....	3.4435- 3.4920	Aug....	3.9770- 4.0255	Nov.....	3.9770- 4.0740
Mar.....	3.7345- 3.7830	June...	3.5405- 3.5890	Sept...	4.0255- 4.0740	Dec.....	4.0740- 4.1225
						Average.	$3.8902

SUITINGS: Clay worsted diagonal, 12-ounce, Washington Mills.

[Price per yard on the first of each month.]

Jan.....	$1.1700	Apr....	$1.1700	July....	$1.0575	Oct.....	$1.0575
Feb.....	1.1700	May....	1.1700	Aug....	1.0575	Nov.....	1.0575
Mar.....	1.1700	June...	1.1700	Sept...	1.0575	Dec.....	1.0575
						Average.	$1.1138

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

SUITINGS: Clay worsted diagonal, 16-ounce, Washington Mills.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.3950	Apr....	$1.3950	July....	$1.2825	Oct.....	$1.2825
Feb.....	1.3950	May....	1.3950	Aug....	1.2825	Nov.....	1.2825
Mar.....	1.3950	June...	1.3950	Sept....	1.2825	Dec.....	1.2825
						Average.	$1.3388

SUITINGS: Indigo blue, all wool, 54-inch, 14-ounce, Middlesex standard.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.5750	Apr....	$1.5750	July....	$1.5750	Oct.....	$1.5750
Feb.....	1.5750	May....	1.5750	Aug....	1.5750	Nov.....	1.5750
Mar.....	1.5750	June...	1.5750	Sept....	1.5750	Dec.....	1.5750
						Average.	$1.5750

SUITINGS: Serge, Washington Mills 6700.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.0575	Apr....	$1.0575	July....	$0.9225	Oct.....	$0.9225
Feb.....	1.0575	May....	1.0575	Aug....	.9225	Nov.....	.9225
Mar.....	1.0575	June...	1.0575	Sept....	.9225	Dec.....	.9675
						Average.	$0.9938

TICKINGS: Amoskeag A. C. A.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.12	Apr....	$0.12	July....	$0.10½	Oct.....	$0.10½
Feb.....	.12	May....	.12	Aug....	.10½	Nov.....	.11¼
Mar.....	.12	June...	.10½	Sept....	.10½	Dec.....	.11¼
						Average.	$0.1125

TROUSERINGS: Fancy worsted, 19 to 20 ounce, all worsted warp and filling, wool and worsted back.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$2.4750	Apr....	$2.4750	July....	$2.4750	Oct.....	$2.4750
Feb.....	2.4750	May....	2.4750	Aug....	2.4750	Nov.....	2.5875
Mar.....	2.4750	June...	2.4750	Sept...	2.4750	Dec.....	2.5875
						Average.	$2.4938

UNDERWEAR: Shirts and drawers, white, all wool, full-fashioned, 18-gauge.

[Price per dozen garments on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$27.00	Apr....	$27.00	July...	$27.00	Oct.....	$27.00
Feb.....	27.00	May...	27.00	Aug....	27.00	Nov....	27.00
Mar.....	27.00	June...	27.00	Sept...	27.00	Dec.....	27.00
						Average.	$27.0000

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Continued.

UNDERWEAR: Shirts and drawers, white, merino, full-fashioned, 60 per cent wool, 40 per cent cotton, 24-gauge.

[Price per dozen garments on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$18.00	Apr....	$18.00	July...	$18.00	Oct.....	$18.00
Feb.....	18.00	May....	18.00	Aug....	18.00	Nov....	18.00
Mar.....	18.00	June...	18.00	Sept...	18.00	Dec.....	18.00
						Average.	$18.0000

WOMEN'S DRESS GOODS: Cashmere, all wool, 8-9 twill, 35-inch, Atlantic Mills.

[Price per yard on the first of each month.]

Jan.....	$0.3185	Apr....	$0.3185	July...	$0.3185	Oct.....	$0.3185
Feb.....	.3185	May...	.3185	Aug....	.3185	Nov....	.3185
Mar.....	.3185	June...	.3185	Sept...	.3185	Dec.....	.3185
						Average.	$0.3185

WOMEN'S DRESS GOODS: Cashmere, cotton warp, 9-twill, 4-4, Atlantic Mills F.

[Price per yard on the first of each month.]

Jan.....	$0.2107	Apr....	$0.2107	July...	$0.2107	Oct.....	$0.2107
Feb.....	.2107	May...	.2107	Aug....	.2107	Nov....	.2107
Mar.....	.2107	June...	.2107	Sept...	.2107	Dec.....	.2107
						Average.	$0.2107

WOMEN'S DRESS GOODS: Cashmere, cotton warp, 36-inch, Hamilton.

[Price per yard on the first of each month.]

Jan.....	$0.1960	Apr....	$0.1911	July...	$0.1911	Oct.....	$0.1862
Feb.....	.1960	May...	.1911	Aug....	.1911	Nov....	.1862
Mar.....	.1960	June...	.1911	Sept...	.1911	Dec.....	.1862
						Average.	$0.1911

WOMEN'S DRESS GOODS: Panama cloth, all wool, 54-inch.

[Price per yard on the first of each month.]

Jan.....	$0.6983	Apr....	$0.6983	July...	$0.6983	Oct.....	$0.6983
Feb.....	.6983	May...	.6983	Aug....	.6983	Nov....	.6983
Mar.....	.6983	June...	.6983	Sept...	.6983	Dec.....	.6983
						Average.	$0.6983

WOMEN'S DRESS GOODS: Poplar cloth, cotton warp and worsted filling, 36-inch.

[Price per yard on the first of each month.]

Jan.....	$0.20	Apr....	$0.20	July...	$0.20	Oct.....	$0.19
Feb.....	.20	May...	.20	Aug....	.20	Nov....	.19
Mar.....	.20	June...	.20	Sept...	.19	Dec.....	.19
						Average.	$0.1967

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

CLOTHS AND CLOTHING—Concluded.

WOMEN'S DRESS GOODS: Sicilian cloth, cotton warp, 50-inch.

[Price per yard on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.3491	Apr....	$0.3491	July....	$0.3491	Oct.....	$0.3491
Feb.....	.3491	May....	.3491	Aug....	.3491	Nov.....	.3491
Mar.....	.3491	June...	.3491	Sept...	.3491	Dec.....	.3491
						Average.	$0.3491

WOOL: Ohio, fine fleece (X and XX grade), scoured.

[Price per pound, in the eastern markets (Baltimore, Boston, New York, and Philadelphia), on the first of each month.]

Jan.....	$0.7021	Apr....	$0.7021	July....	$0.7234	Oct.....	$0.7234
Feb.....	.7021	May....	.7021	Aug....	.7234	Nov.....	.7447
Mar.....	.7021	June...	.7021	Sept...	.7234	Dec.....	.7447
						Average.	$0.7163

WOOL: Ohio, medium fleece (one-fourth and three-eighths grade), scoured.

[Price per pound, in the eastern markets (Baltimore, Boston, New York, and Philadelphia), on the first of each month.]

Jan.....	$0.5000	Apr....	$0.4865	July....	$0.4865	Oct.....	$0.5000
Feb.....	.4865	May....	.4730	Aug....	.4865	Nov.....	.5000
Mar.....	.4865	June...	.4730	Sept...	.5000	Dec.....	.5000
						Average.	$0.4899

WORSTED YARNS: 2-40s, Australian fine.

[Price per pound on the first of each month.]

Jan.....	$1.27	Apr....	$1.22	July....	$1.22	Oct.....	$1.22
Feb.....	1.25	May....	1.22	Aug....	1.22	Nov.....	1.25
Mar.....	1.22	June...	1.20	Sept...	1.22	Dec.....	1.25
						Average.	$1.2300

WORSTED YARNS: 2-32s, crossbred stock, white, in skeins.

[Price per pound on the first of each month.]

Jan.....	$0.88	Apr....	$0.80	July....	$0.76	Oct.....	$0.76
Feb.....	.88	May....	.80	Aug....	.76	Nov.....	.76
Mar.....	.88	June...	.76	Sept...	.76	Dec.....	.82
						Average.	$0.8017

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FUEL AND LIGHTING.

CANDLES: Adamantine, 6s, 14-ounce.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.	$0.07⅜	Apr.	$0.07¼	July.	$0.07¼	Oct.	$0.07⅜
Feb.	.07⅜	May.	.07¼	Aug.	.07¼	Nov.	.07⅜
Mar.	.07⅜	June.	.07¼	Sept.	.07¼	Dec.	.07⅜
						Average.	$0.0731

COAL: Anthracite, broken.

[Average monthly selling price per ton, at tide water, New York Harbor.]

Jan.	$4.2071	Apr.	$4.2000	July.	$4.2066	Oct.	$4.2000
Feb.	4.2068	May.	4.2018	Aug.	4.2000	Nov.	4.2000
Mar.	4.2000	June.	4.2059	Sept.	4.2000	Dec.	4.2000
						Average.	$4.2019

COAL: Anthracite, chestnut.

[Average monthly selling price per ton, at tide water, New York Harbor.]

Jan.	$4.9470	Apr.	$4.4500	July.	$4.7377	Oct.	$4.9492
Feb.	4.9500	May.	4.5343	Aug.	4.8439	Nov.	4.9502
Mar.	4.9500	June.	4.6469	Sept.	4.9398	Dec.	4.9486
						Average.	$4.8206

COAL: Anthracite, egg.

[Average monthly selling price per ton, at tide water, New York Harbor.]

Jan.	$4.9504	Apr.	$4.4500	July.	$4.7475	Oct.	$4.9500
Feb.	4.9500	May.	4.5327	Aug.	4.8285	Nov.	4.9500
Mar.	4.9500	June.	4.6463	Sept.	4.9384	Dec.	4.9500
						Average.	$4.8203

COAL: Anthracite, stove.

[Average monthly selling price per ton, at tide water, New York Harbor.]

Jan.	$4.9503	Apr.	$4.4510	July.	$4.7469	Oct.	$4.9483
Feb.	4.9500	May.	4.5357	Aug.	4.8497	Nov.	4.9500
Mar.	4.9500	June.	4.6453	Sept.	4.9459	Dec.	4.9486
						Average.	$4.8226

COAL: Bituminous, Georges Creek.

[Price per ton, at the mine, on the first of each month.]

Jan.	$1.50	Apr.	$1.50	July.	$1.35	Oct.	$1.45
Feb.	1.50	May.	1.40	Aug.	1.40	Nov.	1.45
Mar.	1.50	June.	1.40	Sept.	1.40	Dec.	1.45
						Average.	$1.4417

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FUEL AND LIGHTING—Continued.

COAL: Bituminous, Georges Creek.

[Price per ton, f. o. b. New York Harbor, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$3.15	Apr....	$3.10	July....	$3.05	Oct.....	$3.10
Feb.....	3.10	May....	3.00	Aug....	3.05	Nov.....	3.10
Mar.....	3.10	June...	3.05	Sept...	3.05	Dec.....	3.10
						Average.	$3.0792

COAL: Bituminous, Pittsburg (Youghiogheny), lump.

[Price per bushel on Tuesday of each week, Cincinnati, afloat; quotations furnished by the superintendent of the Cincinnati Chamber of Commerce.]

Jan.....	$0.09	Apr....	$0.08½	July....	$0.08½	Oct.....	$0.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
Feb.....	.08½	May....	.08½	Aug....	.08½	Nov.....	.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
Mar.....	.08½	June...	.08½	Sept....	.08½	Dec.....	.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
	.08½		.08½		.08½		.08½
						Average.	$0.0851

COKE: Connellsville, furnace.

[Contract price per ton, f. o. b. at the ovens, on the first of each month; quotations from the Iron Age.]

Jan.....	$2.00-$2.25	Apr....	$1.60	July....	$1.60	Oct.....	$1.50
Feb.....	1.70- 1.75	May....	$1.50- 1.60	Aug....	$1.50- 1.75	Nov.....	$1.65- 2.00
Mar.....	1.80- 1.85	June...	1.50- 1.75	Sept....	1.50	Dec.....	1.85- 2.15
						Average.	$1.7083

MATCHES: Parlor, domestic.

[Price per gross of boxes (200s), in New York, on the first of each month; quotations from the Merchants' Review.]

Jan.....	$1.50	Apr....	$1.50	July....	$1.50	Oct.....	$1.50
Feb.....	1.50	May....	1.50	Aug....	1.50	Nov.....	1.50
Mar.....	1.50	June...	1.50	Sept....	1.50	Dec.....	1.50
						Average.	$1.5000

PETROLEUM: Crude, Pennsylvania.

[Price per barrel, at the wells, on the first of each month; quotations from the Oil City Derrick.]

Jan.....	$1.78	Apr....	$1.78	July....	$1.78	Oct.....	$1.78
Feb.....	1.78	May....	1.78	Aug....	1.78	Nov.....	1.78
Mar.....	1.78	June...	1.78	Sept....	1.78	Dec.....	1.78
						Average.	$1.7800

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

FUEL AND LIGHTING—Concluded.

PETROLEUM: Refined, in barrels, cargo lots, for export.

[Price per gallon, New York loading, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.0875	Apr....	$0.0875	July....	$0.0875	Oct.....	$0.0850
Feb.....	.0875	May....	.0875	Aug....	.0875	Nov.....	.0850
Mar.....	.0875	June...	.0875	Sept....	.0875	Dec.....	.0850
						Average.	$0.0869

PETROLEUM: Refined, 150° fire test, water white, in barrels, packages included (jobbing lots).

[Price per gallon, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.13½	Apr....	$0.13½	July....	$0.13½	Oct.....	$0.13½
Feb.....	.13½	May....	.13½	Aug....	.13½	Nov.....	.13½
Mar.....	.13½	June...	.13½	Sept....	.13½	Dec.....	.13½
						Average.	$0.1350

METALS AND IMPLEMENTS.

AUGERS: Extra, 1-inch.

[Price per auger, in New York, on the first of each month.]

Jan.....	$0.42	Apr....	$0.42	July....	$0.42	Oct.....	$0.42
Feb.....	.42	May....	.42	Aug....	.42	Nov.....	.42
Mar.....	.42	June...	.42	Sept...	.42	Dec.....	.42
						Average.	$0.4200

AXES: M. C. O., Yankee, pattern handled.

[Price per ax, in New York, on the first of each month.]

Jan.....	$0.68	Apr....	$0.68	July....	$0.68	Oct.....	$0.68
Feb.....	.68	May....	.68	Aug....	.68	Nov.....	.68
Mar.....	.68	June...	.68	Sept...	.68	Dec.....	.68
						Average.	$0.6800

BAR IRON: Best refined, from store.

[Average monthly price per pound, in Philadelphia; quotations from the Bulletin of the American Iron and Steel Association.]

Jan.....	$0.0176	Apr....	$0.0176	July....	$0.0166	Oct.....	$0.0166
Feb.....	.0176	May....	.0176	Aug....	.0166	Nov.....	.0166
Mar.....	.0176	June...	.0166	Sept...	.0166	Dec.....	.0166
						Average.	$0.0170

BAR IRON: Common to best refined, from mill.

[Price per pound, on the first of each month, f. o. b. Pittsburg; quotations from the Iron Age.]

Jan.....	$0.0160	Apr....	$0.0147-$0.0150	July...	$0.0140	Oct.....	$0.0140
Feb.....	.0140	May...	.0147- .0150	Aug....	.0140	Nov.....	.0140
Mar.....	$0.0147- .0150	June...	.0147- .0150	Sept....	.0140	Dec.....	.0150
						Average.	$0.0146

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

METALS AND IMPLEMENTS—Continued.

BARB WIRE: Galvanized.

[Average monthly price per hundred pounds, in Chicago; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$2.68	Apr	$2.68	July	$2.58	Oct	$2.58
Feb	2.68	May	2.68	Aug	2.58	Nov	2.58
Mar	2.68	June	2.58	Sept	2.58	Dec	2.58
						Average.	$2.6217

BUTTS: Loose pin, wrought steel, 3½ by 3½ inch.

[Price per pair, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.09	Apr	$0.09	July	$0.09	Oct	$0.09
Feb	.09	May	.09	Aug	.09	Nov	.09
Mar	.09	June	.09	Sept	.09	Dec	.09
						Average.	$0.0900

CHISELS: Extra, socket firmer, 1-inch.

[Price per chisel, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.375	Apr	$0.375	July	$0.375	Oct	$0.375
Feb	.375	May	.375	Aug	.375	Nov	.375
Mar	.375	June	.375	Sept	.375	Dec	.375
						Average.	$0.3750

COPPER: Ingot, electrolytic.

[Price per pound, in New York, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.1375-$0.1400	Apr	$0.1300	July	$0.1262½-$0.1275	Oct	$0.1355
Feb	.1362½- .1362½	May	$0.1260 - .1270	Aug	.1350	Nov	$0.1375- .1387½
Mar	.1237½- .1275	June	.1262½- .1275	Sept	.1375	Dec	.1425- .1450
						Average.	$0.1334

COPPER: Sheet, hot-rolled (base sizes).

[Price per pound, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.20	Apr	$0.17	July	$0.17	Oct	$0.18
Feb	.20	May	.17	Aug	.17	Nov	.18
Mar	.17	June	.17	Sept	.18	Dec	.19
						Average.	$0.1792

COPPER WIRE: Bare, No. 8, B. and S. gauge and heavier (base sizes).

[Price per pound, f. o. b. New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.16½	Apr	$0.14¾	July	$0.14¾	Oct	$0.15¼
Feb	.16½	May	.14¾	Aug	.14½	Nov	.15
Mar	.14½	June	.14¾	Sept	.15¼	Dec	.15¾
						Average.	$0.1519

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

METALS AND IMPLEMENTS —Continued.

DOORKNOBS: Steel, bronze plated.

[Price per pair, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.40	Apr....	$0.40	July....	$0.40	Oct.....	$0.40
Feb.....	.40	May....	.40	Aug....	.40	Nov.....	.40
Mar.....	.40	June...	.40	Sept...	.40	Dec.....	.40
						Average.	$0.4000

FILES: 8-inch mill bastard, Nicholson.

[Price per dozen on the first of each month.]

Jan.....	$0.97	Apr....	$0.97	July....	$0.95	Oct.....	$0.94
Feb.....	.97	May....	.96	Aug....	.94	Nov.....	.94
Mar.....	.97	June...	.96	Sept...	.94	Dec.....	.94
						Average.	$0.9542

HAMMERS: Maydole No. 1½.

[Price per hammer, in New York, on the first of each month.]

Jan.....	$0.466	Apr....	$0.466	July...	$0.466	Oct.....	$0.466
Feb.....	.466	May...	.466	Aug....	.466	Nov....	.466
Mar.....	.466	June...	.466	Sept...	.466	Dec.....	.466
						Average.	$0.4660

LEAD: Pig, desilverized.

[Price per pound, in New York, from store, on the first of each month; quotations from the Iron Age.]

Jan.....	$0.0365-$0.0375	Apr....	$0.0400	July...	$0.0450	Oct.....	$0.0445-$0.0460
Feb.....	.0375- .0380	May...	.0420	Aug....	.0460	Nov....	.0430- .0445
Mar.....	.0375	June...	.0420	Sept...	$0.0457½- .0460	Dec.....	.0430- .0427½
						Average.	$0.0422

LEAD PIPE.

[Price per 100 pounds, f. o. b. New York, on the first of each month.]

Jan.....	$4.68	Apr....	$4.35	July...	$5.00	Oct.....	$5.10
Feb.....	4.25	May...	4.60	Aug....	5.00	Nov....	5.00
Mar.....	4.25	June...	4.75	Sept...	5.10	Dec.....	4.80
						Average.	$4.7400

LOCKS: Common mortise, knob lock, 3½-inch.

[Price per lock, in New York, on the first of each month.]

Jan.....	$0.166	Apr....	$0.166	July...	$0.166	Oct.....	$0.166
Feb.....	.166	May...	.166	Aug....	.166	Nov....	.166
Mar.....	.166	June...	.166	Sept...	.166	Dec.....	.166
						Average.	$0.1660

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

METALS AND IMPLEMENTS—Continued.

NAILS: Cut, 8-penny, fence and common.

[Price per 100-pound keg, f. o. b. Pittsburg, on the first of each month; quotations computed from base prices published in the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$2.10-$2.15	Apr	$2.00-$2.05	July	$1.85	Oct	$1.85
Feb	2.10- 2.15	May	2.00- 2.05	Aug	$1.85- 1.90	Nov	1.85
Mar	2.00- 2.05	June	1.95	Sept	1.85	Dec	1.85
						Average.	$1.9500

NAILS: Wire, 8-penny, fence and common.

[Price per 100-pound keg, f. o. b. Pittsburg, on the first of each month; quotations computed from base prices published in the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$2.15	Apr	$2.15	July	$2.05	Oct	$2.05
Feb	2.15	May	2.15	Aug	2.05	Nov	2.05
Mar	2.15	June	2.15	Sept	2.05	Dec	2.05
						Average.	$2.1000

PIG IRON: Bessemer.

[Average monthly price per ton in Pittsburg; quotations from the Bulletin of the American Iron and Steel Association.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$19.90	Apr	$17.49	July	$16.82	Oct	$15.75
Feb	16.90	May	16.96	Aug	16.26	Nov	16.59
Mar	17.86	June	16.90	Sept	15.90	Dec	17.40
						Average.	$17.0700

PIG IRON: Foundry No. 1.

[Average monthly price per ton in Philadelphia; quotations from the Bulletin of the American Iron and Steel Association.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$18.70	Apr	$18.15	July	$17.00	Oct	$17.25
Feb	18.75	May	17.44	Aug	17.00	Nov	17.50
Mar	18.62	June	17.12	Sept	17.12	Dec	17.75
						Average.	$17.7000

PIG IRON: Foundry No. 2, northern.

[Price per ton, f. o. b. Pittsburg, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$17.65-$18.40	Apr	$16.40	July	$15.90	Oct	$15.25-$15.40
Feb	16.90- 17.40	May	$16.55- 16.80	Aug	$15.40- 15.65	Nov	15.40
Mar	16.65- 16.90	June	15.90	Sept	15.40- 15.65	Dec	16.40
						Average.	$16.2500

PIG IRON: Gray forge, southern, coke.

[Price per ton, f. o. b. Cincinnati, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$14.75-$15.25	Apr	$13.75-$14.25	July	$13.75-$14.25	Oct	$14.25-$14.75
Feb	14.25- 14.75	May	13.50- 14.00	Aug	14.00- 14.50	Nov	14.25- 14.75
Mar	14.25- 14.75	June	13.75- 14.25	Sept	14.25- 14.75	Dec	14.75- 15.25
						Average.	$14.3750

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

METALS AND IMPLEMENTS—Continued.

PLANES: Bailey No. 5, jack plane.

[Price per plane, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$1.53	Apr	$1.53	July	$1.53	Oct	$1.53
Feb	1.53	May	1.53	Aug	1.53	Nov	1.53
Mar	1.53	June	1.53	Sept	1.53	Dec	1.53
						Average.	$1.5300

QUICKSILVER.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan	$0.61	Apr	$0.61	July	$0.59½	Oct	$0.62
Feb	.61	May	.61	Aug	.59	Nov	.64
Mar	.61	June	.60	Sept	.60	Dec	.62½
						Average.	$0.6100

SAWS: Crosscut, Disston No. 2, 6-foot.

[Price per saw to small jobbers, f. o. b. Philadelphia, on the first of each month.]

Jan	$1.6038	Apr	$1.6038	July	$1.6038	Oct	$1.6038
Feb	1.6038	May	1.6038	Aug	1.6038	Nov	1.6038
Mar	1.6038	June	1.6038	Sept	1.6038	Dec	1.6038
						Average.	$1.6038

SAWS: Hand, Disston No. 7, 26-inch.

[Price per dozen to small jobbers, f. o. b. Philadelphia, on the first of each month.]

Jan	$12.95	Apr	$12.95	July	$12.95	Oct	$12.95
Feb	12.95	May	12.95	Aug	12.95	Nov	12.95
Mar	12.95	June	12.95	Sept	12.95	Dec	12.95
						Average.	$12.9500

SHOVELS: Ames No. 2, cast steel, D handle, square point, back strap, black.

[Price per dozen on the first of each month.]

Jan	$7.84	Apr	$7.84	July	$7.84	Oct	$7.84
Feb	7.84	May	7.84	Aug	7.84	Nov	7.84
Mar	7.84	June	7.84	Sept	7.84	Dec	7.62
						Average	$7.8217

SILVER: Bar, fine.

[Average monthly price per ounce, in New York; quotations furnished by the Director of the Mint.]

Jan	$0.56274	Apr	$0.55129	July	$0.53796	Oct	$0.52050
Feb	.56630	May	.53427	Aug	.52302	Nov	.50320
Mar	.55990	June	.54278	Sept	.52360	Dec	.49399
						Average.	$0.53496

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

METALS AND IMPLEMENTS—Continued.

SPELTER: Western.

[Price per pound, in New York, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.0440-$0.0445	Apr	$0.0470-$0.0475	July	$0.0450	Oct	$0.0485
Feb	.0470- .0475	May	.0465- .0470	Aug	$0.0480- .0485	Nov	$0.0490- .0505
Mar	.0475	June	.0455- .0460	Sept	.0475	Dec	.0517½- .0520
						Average.	$0.0475

STEEL BILLETS.

[Average monthly price per ton, at mills at Pittsburg; quotations from the Bulletin of the American Iron and Steel Association.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$28.00	Apr	$28.00	July	$25.00	Oct	$25.00
Feb	28.00	May	28.00	Aug	25.00	Nov	25.00
Mar	28.00	June	25.75	Sept	25.00	Dec	25.00
						Average.	$26.3125

STEEL RAILS.

[Price per ton, at mills in Pennsylvania; quotations from the Bulletin of the American Iron and Steel Association.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$28.00	Apr	$28.00	July	$28.00	Oct	$28.00
Feb	28.00	May	28.00	Aug	28.00	Nov	28.00
Mar	28.00	June	28.00	Sept	28.00	Dec	28.00
						Average.	$28.0000

STEEL SHEETS: Black, No. 27, box annealed, one pass through cold rolls.

[Price per pound, in Pittsburg, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.0240	Apr	$0.0240	July	$0.0240	Oct	$0.0240
Feb	.0240	May	.0240	Aug	.0240	Nov	.0240
Mar	.0240	June	.0240	Sept	.0240	Dec	.0240
						Average.	$0.0240

TIN: Pig.

[Price per pound, in New York, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$0.2675	Apr	$0.3125	July	$0.2720	Oct	$0.2950
Feb	.2860	May	.3105	Aug	$0.3070- .3075	Nov	.3037½
Mar	$0.3025- .3050	June	.2885	Sept	.2900	Dec	.2940
						Average.	$0.2942

TIN PLATES: Domestic, Bessemer, coke, 14 by 20 inch.

[Price per 100 pounds, in New York, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$3.89	Apr	$3.89	July	$3.89	Oct	$3.89
Feb	3.89	May	3.89	Aug	3.89	Nov	3.89
Mar	3.89	June	3.89	Sept	3.89	Dec	3.89
						Average.	$3.8900

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

METALS AND IMPLEMENTS—Concluded.

TROWELS: M. C. O., brick, 10½-inch.

[Price per trowel, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.34	Apr....	$0.34	July....	$0.34	Oct.....	$0.34
Feb.....	.34	May....	.34	Aug....	.34	Nov.....	.34
Mar.....	.34	June...	.34	Sept...	.34	Dec.....	.34
						Average.	$0.3400

VISES: Solid box, 50-pound.

[Price per vise, in New York, on the first of each month.]

Jan.....	$4.37	Apr....	$4.37	July....	$4.37	Oct.....	$4.37
Feb.....	4.37	May....	4.37	Aug....	4.37	Nov.....	4.37
Mar.....	4.37	June...	4.37	Sept....	4.37	Dec.....	4.37
						Average.	$4.3700

WOOD SCREWS: 1-inch, No. 10, flat head.

[Price per gross, in New York, on the first of each month.]

Jan.....	$0.10	Apr....	$0.10	July....	$0.10	Oct.....	$0.10
Feb.....	.10	May....	.10	Aug....	.10	Nov.....	.10
Mar.....	.10	June...	.10	Sept....	.10	Dec.....	.10
						Average.	$0.1000

ZINC: Sheet, ordinary numbers and sizes, packed in 600-pound casks.

[Price per hundred pounds, f. o. b. La Salle, Ill., on the first of each month.]

Jan.....	$6.44	Apr....	$6.44	July....	$6.44	Oct.....	$6.44
Feb.....	6.44	May....	6.44	Aug....	6.44	Nov.....	6.44
Mar.....	6.44	June...	6.44	Sept...	6.44	Dec.....	6.44
						Average.	$6.4400

LUMBER AND BUILDING MATERIALS.

BRICK: Common domestic building.

[Price per thousand, on dock in New York, from the first to the last of each month.]

Jan.....	$5.25-$5.75	Apr....	$5.00-$5.75	July....	$4.50-$4.75	Oct.....	$4.50-$5.00
Feb.....	5.25- 5.75	May....	4.50- 5.00	Aug....	4.25- 4.75	Nov.....	5.50- 6.00
Mar.....	4.75- 5.75	June...	4.50- 4.75	Sept...	4.25- 4.75	Dec.....	6.00- 6.25
						Average.	$5.1042

CARBONATE OF LEAD: American, in oil.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.0637	Apr....	$0.0637	July....	$0.0662	Oct.....	$0.0662
Feb.....	.0637	May....	.0637	Aug....	.0662	Nov.....	.0662
Mar.....	.0637	June...	.0637	Sept...	.0662	Dec.....	.0662
						Average.	$0.0650

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

LUMBER AND BUILDING MATERIALS—Continued.

CEMENT: Portland, domestic.

[Price per barrel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.55	Apr....	$1.45	July....	$1.45	Oct.....	$1.45
Feb.....	1.45	May....	1.45	Aug....	1.45	Nov.....	1.45
Mar.....	1.45	June...	1.45	Sept...	1.45	Dec.....	1.45
						Average.	$1.4600

CEMENT: Rosendale.

[Price per barrel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.95	Apr....	$0.95	July....	$0.95	Oct.....	$0.95
Feb.....	.95	May....	.95	Aug....	.95	Nov.....	.95
Mar.....	.95	June...	.95	Sept...	.95	Dec.....	.95
						Average.	$0.9500

DOORS: Western white pine, 2 feet 8 inches by 6 feet 8 inches, 1⅜ inches thick, 5-panel, No. 1, O. G.

[Price per door, f. o. b. Chicago, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$2.01	Apr....	$1.68½	July...	$1.68½	Oct.....	$1.68½
Feb.....	2.01	May...	1.68½	Aug....	1.68½	Nov....	1.68½
Mar.....	1.68½	June...	1.68½	Sept...	1.68½	Dec.....	1.74
						Average.	$1.7438

HEMLOCK: Base sizes.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$22.00	Apr....	$20.50-$21.50	July...	$21.00	Oct.....	$20.00
Feb.....	22.00	May...	20.50- 21.50	Aug....	21.00	Nov....	20.00
Mar.....	21.50	June...	21.00	Sept...	20.00	Dec.....	20.00
						Average.	$20.8750

LIME: Rockport, common.

[Price per barrel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.02-$1.07	Apr....	$1.02-$1.07	July...	$1.02-$1.07	Oct.....	$1.02-$1.07
Feb.....	1.02- 1.07	May...	1.02- 1.07	Aug....	1.02- 1.07	Nov....	1.02- 1.07
Mar.....	1.02- 1.07	June...	1.02- 1.07	Sept...	1.02- 1.07	Dec.....	1.02- 1.07
						Average.	$1.0450

LINSEED OIL: Raw, city, in barrels.

[Price per gallon, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.44	Apr....	$0.43	July...	$0.44	Oct.....	$0.43
Feb.....	.44	May...	.42	Aug....	.44	Nov....	.42
Mar.....	.43	June...	.44	Sept...	.44	Dec.....	.48
						Average.	$0.4375

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

LUMBER AND BUILDING MATERIALS—Continued.

MAPLE: Hard, 1-inch, firsts and seconds, 6 inches and up wide.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$32.00-$33.00	Apr....	$32.00-$33.00	July...	$30.00-$32.00	Oct.....	$30.00-$32.00
Feb.....	32.00- 33.00	May...	32.00- 33.00	Aug....	30.00- 32.00	Nov....	30.00- 32.00
Mar.....	32.00- 33.00	June...	30.00- 32.00	Sept...	30.00- 32.00	Dec.....	30.00- 32.00
						Average.	$31.6250

OAK: White, plain, 1-inch, 6 inches and up wide.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$53.00-$55.00	Apr....	$51.00-$53.00	July...	$45.00-$48.00	Oct.....	$47.00-$48.00
Feb.....	51.00- 53.00	May...	51.00- 53.00	Aug....	45.00- 48.00	Nov....	47.00- 48.00
Mar.....	51.00- 53.00	June...	45.00- 48.00	Sept...	47.00- 48.00	Dec.....	47.00- 48.00
						Average.	$49.2917

OAK: White, quartered, clear and good seconds, 6 inches and up wide, 10 to 16 feet long.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$78.00-$82.00	Apr....	$78.00-$82.00	July....	$78.00-$82.00	Oct.....	$78.00-$82.00
Feb.....	78.00- 82.00	May....	78.00- 82.00	Aug....	78.00- 82.00	Nov.....	78.00- 82.00
Mar.....	78.00- 82.00	June...	78.00- 82.00	Sept...	78.00- 82.00	Dec.....	80.00- 84.00
						Average.	$80.1667

OXIDE OF ZINC: American, extra dry.

[Price per pound on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.05⅛	Apr....	$0.05⅛	July....	$0.05⅛	Oct.....	$0.05⅛
Feb.....	.05⅛	May....	.05⅛	Aug....	.05⅛	Nov.....	.05⅛
Mar.....	.05⅛	June...	.05⅛	Sept...	.05⅛	Dec.....	.05⅛
						Average.	$0.0513

PINE: White, boards, No. 2 barn, 1-inch, 10 inches wide, rough.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$37.50-$38.00	Apr....	$37.50-$38.00	July....	$35.00-$35.50	Oct.....	$35.00-$35.50
Feb.....	37.50- 38.00	May....	37.50- 38.00	Aug....	35.00- 35.50	Nov.....	35.00- 35.50
Mar.....	37.50- 38.00	June...	35.00- 35.50	Sept...	35.00- 35.50	Dec.....	36.00- 36.50
						Average.	$36.3750

PINE: White, boards, uppers, 1-inch, 8 inches and up wide, rough.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$97.50-$99.50	Apr....	$97.50-$99.50	July....	$94.50-$96.50	Oct.....	$92.50-$94.50
Feb.....	97.50- 99.50	May....	97.50- 99.50	Aug....	94.50- 96.50	Nov.....	92.50- 94.50
Mar.....	97.50- 99.50	June...	94.50- 96.50	Sept...	92.50- 94.50	Dec.....	92.50- 94.50
						Average.	$96.0833

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

LUMBER AND BUILDING MATERIALS—Continued.

PINE: Yellow, flooring, B, heart face, rift sawn, 1 inch thick, 2¼ inches wide (counted 3 in).

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$41.00-$42.00	Apr....	$44.00-$45.00	July....	$46.00-$47.00	Oct.....	$43.00-$44.00
Feb.....	41.00- 42.00	May....	44.00- 45.00	Aug....	43.00- 44.00	Nov.....	43.00- 44.00
Mar.....	44.00- 45.00	June...	46.00- 47.00	Sept...	43.00- 44.00	Dec.....	43.00- 44.00
						Average.	$43.9167

PINE: Yellow, siding, long leaf, boards, heart face, 1-inch and 1¼-inch.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$30.00-$31.00	Apr....	$30.00-$31.00	July....	$30.00-$31.00	Oct.....	$30.00-$31.00
Feb.....	30.00- 31.00	May....	30.00- 31.00	Aug....	30.00- 31.00	Nov.....	30.00- 31.00
Mar.....	30.00- 31.00	June...	30.00- 31.00	Sept...	30.00- 31.00	Dec.....	30.00- 31.00
						Average.	$30.5000

PLATE GLASS: Polished, glazing, area 3 to 5 square feet.

[Price per square foot, f. o. b. New York, on the first of each month.]

Jan.....	$0.21	Apr....	$0.16	July....	$0.16	Oct.....	$0.16
Feb.....	.21	May....	.16	Aug....	.16	Nov.....	.18
Mar.....	.16	June...	.16	Sept...	.16	Dec.....	.20
						Average.	$0.1733

PLATE GLASS: Polished, glazing, area 5 to 10 square feet.

[Price per square foot, f. o. b. New York, on the first of each month.]

Jan.....	$0.32	Apr....	$0.26	July....	$0.26	Oct.....	$0.26
Feb.....	.32	May....	.26	Aug....	.26	Nov.....	.28
Mar.....	.26	June...	.26	Sept....	.26	Dec.....	.30
						Average.	$0.2750

POPLAR: Yellow, 1-inch, 8 inches and up wide, firsts and seconds, rough.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$57.00-$62.00	Apr....	$59.00-$61.00	July....	$55.00-$59.00	Oct.....	$57.00-$60.00
Feb.....	55.00- 58.00	May....	59.00- 61.00	Aug....	55.00- 59.00	Nov.....	57.00- 60.00
Mar.....	57.00- 60.00	June...	55.00- 59.00	Sept....	57.00- 60.00	Dec.....	57.00- 60.00
						Average.	$58.2917

PUTTY: Bulk.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.0120	Apr....	$0.0120	July....	$0.0120	Oct.....	$0.0120
Feb.....	.0120	May....	.0120	Aug....	.0120	Nov.....	.0120
Mar.....	.0120	June...	.0120	Sept...	.0120	Dec.....	.0120
						Average.	$0.0120

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

LUMBER AND BUILDING MATERIALS—Continued.

ROSIN: Common to good, strained.

[Price per barrel, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan......	$3.20	Apr....	$3.90	July....	$3.15	Oct.....	$2.85-$2.90
Feb.....	4.00	May....	3.60	Aug....	3.00	Nov.....	2.90
Mar.....	3.75	June...	2.95	Sept...	2.80	Dec.....	3.25
						Average.	$3.2817

SHINGLES: Cypress, all heart, 5 and 6 inches wide, 16 inches long.

[Price per M, f. o. b. mills, on the first of each month.]

Jan.....	$3.85	Apr....	$3.60	July....	$3.35	Oct.....	$3.35
Feb.....	3.85	May....	3.60	Aug....	3.35	Nov.....	3.35
Mar.....	3.85	June...	3.60	Sept...	3.35	Dec.....	3.35
						Average.	$3.5375

SHINGLES: Red cedar, clears, random width, 16 inches long.

[Average monthly price at mills in Washington.]

Jan.....	$2.25	Apr....	$2.10	July....	$1.95	Oct.....	$1.85
Feb.....	2.15	May....	1.90	Aug....	1.95	Nov.....	1.85
Mar.....	2.10	June...	1.95	Sept....	2.20	Dec.....	1.90
						Average.	$2.0125

SPRUCE: 6 to 9 inch, cargoes.

[Price per M feet, in New York, on the first of each month; quotations from the New York Lumber Trade Journal.]

Jan.....	$20.00-$22.00	Apr....	$20.00-$22.00	July....	$18.00-$21.00	Oct.....	$19.00-$22.00
Feb.....	20.00- 22.00	May....	20.00- 22.00	Aug....	18.00- 21.00	Nov.....	20.00- 23.00
Mar.....	20.00- 22.00	June...	18.00- 21.00	Sept....	19.00- 22.00	Dec.....	22.00- 25.00
						Average.	$20.7917

TAR.

[Price per barrel, in Wilmington, N. C., on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan.....	(a)	Apr....	$1.50	July....	$1.50	Oct.....	$1.90
Feb.....	(a)	May....	1.60	Aug....	1.50	Nov.....	1.90
Mar.....	$1.30	June...	1.50	Sept....	1.40	Dec.....	1.90
						Average.	$1.6000

TURPENTINE: Spirits of, in machine barrels.

[Price per gallon, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan.....	$0.43½	Apr....	$0.56-$0.57	July....	$0.42	Oct.....	$0.39
Feb.....	.55½	May....	.47½	Aug....	.41	Nov.....	.40
Mar.....	.53½	June...	.43½	Sept....	.39	Dec.....	.43
						Average.	$0.4533

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a No quotation for month.

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

LUMBER AND BUILDING MATERIALS—Concluded.

WINDOW GLASS: American, single, firsts, 25-inch bracket (6 by 8 to 10 by 15 inches).

[Price per 50 square feet, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$2.72	Apr....	$2.56	July....	$1.92	Oct.....	$2.56
Feb.....	2.24	May....	1.92	Aug....	2.40	Nov.....	2.40
Mar.....	2.56	June...	1.92	Sept....	2.56	Dec.....	2.56
						Average.	$2.3600

WINDOW GLASS: American, single, thirds, 25-inch bracket (6 by 8 to 10 by 15 inches).

[Price per 50 square feet, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$2.1675	Apr....	$2.0400	July....	$1.5300	Oct.....	$2.0400
Feb.....	1.7850	May....	1.5300	Aug....	1.9125	Nov.....	1.9125
Mar.....	2.0400	June...	1.5300	Sept....	2.0400	Dec.....	2.0400
						Average.	$1.8806

DRUGS AND CHEMICALS.

ALCOHOL: Grain.

[Price per gallon, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$2.63	Apr....	$2.63	July....	$2.63	Oct.....	$2.65
Feb.....	2.63	May...	2.63	Aug....	2.63	Nov.....	2.65
Mar.....	2.63	June...	2.63	Sept...	2.65	Dec.....	2.65
						Average.	$2.6367

ALCOHOL: Wood, refined, 95 per cent.

[Price per gallon, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.39	Apr....	$0.39	July...	$0.46	Oct.....	$0.45
Feb.....	.39	May...	.39	Aug....	.46	Nov.....	.47
Mar.....	.39	June...	.41	Sept...	.46	Dec.....	.47
						Average.	$0.4275

ALUM: Lump.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.0175	Apr....	$0.0175	July....	$0.0175	Oct.....	$0.0175
Feb.....	.0175	May....	.0175	Aug....	.0175	Nov.....	.0175
Mar.....	.0175	June...	.0175	Sept...	.0175	Dec.....	.0175
						Average.	$0.0175

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

DRUGS AND CHEMICALS—Concluded.

BRIMSTONE: Crude, seconds.

[Price per ton, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$19.50	Apr....	$22.00	July...	$22.00	Oct.....	$22.00
Feb.....	22.00	May...	22.00	Aug....	22.00	Nov.....	22.00
Mar.....	22.00	June...	22.00	Sept...	22.00	Dec.....	22.00
						Average.	$21.7917

GLYCERIN: Refined, chemically pure, in bulk.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.16	Apr....	$0.15½	July...	$0.13½	Oct.....	$0.14½
Feb.....	.16	May....	.14¼	Aug....	.13½	Nov.....	.15
Mar.....	.16	June...	.13¾	Sept...	.14½	Dec.....	.16½
						Average.	$0.1492

MURIATIC ACID: 20°.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.0135	Apr....	$0.0135	July...	$0.0135	Oct.....	$0.0135
Feb.....	.0135	May....	.0135	Aug....	.0135	Nov.....	.0135
Mar.....	.0135	June...	.0135	Sept...	.0135	Dec.....	.0135
						Average.	$0.0135

OPIUM: Natural, in cases.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$5.00	Apr....	$4.37½	July....	$5.75	Oct.....	$4.50
Feb.....	4.55	May....	4.55	Aug....	5.50	Nov.....	4.30
Mar.....	4.50	June...	4.50	Sept...	5.00	Dec.....	4.05
						Average.	$4.7146

QUININE: American, in 100-ounce tins.

[Price per ounce, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.16	Apr....	$0.16	July....	$0.16	Oct.....	$0.15
Feb.....	.16	May....	.16	Aug....	.16	Nov.....	.15
Mar.....	16	June...	.16	Sept...	.15	Dec.....	.15
						Average.	$0.1567

SULPHURIC ACID: 66°.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan.....	$0.0100	Apr....	$0.0110	July....	$0.0100	Oct.....	$0.0100
Feb.....	.0110	May....	.0090	Aug....	.0100	Nov.....	.0100
Mar.....	.0110	June...	.0100	Sept...	.0100	Dec.....	.0100
						Average.	$0.0102

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

HOUSE FURNISHING GOODS.

EARTHENWARE: Plates, cream-colored, 7-inch.

[Price per dozen, f. o. b. Trenton, N. J., on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.4300	Apr....	$0.4300	July....	$0.4300	Oct.....	$0.4300
Feb.....	.4300	May....	.4300	Aug....	.4300	Nov.....	.4300
Mar.....	.4300	June...	.4300	Sept...	.4300	Dec.....	.4300
						Average.	$0.4300

EARTHENWARE: Plates, white granite, 7-inch.

[Price per dozen, f. o. b. Trenton, N. J., on the first of each month.]

Jan.....	$0.4586	Apr....	$0.4586	July....	$0.4586	Oct.....	$0.4586
Feb.....	.4586	May....	.4586	Aug....	.4586	Nov.....	.4586
Mar.....	.4586	June...	.4586	Sept...	.4586	Dec.....	.4586
						Average.	$0.4586

EARTHENWARE: Teacups and saucers, white granite, with handles.

[Price per gross (6 dozen cups, and 6 dozen saucers), f. o. b. Trenton, N. J., on the first of each month.]

Jan.....	$3.3869	Apr....	$3.3869	July....	$3.3869	Oct.....	$3.3869
Feb.....	3.3869	May....	3.3869	Aug....	3.3869	Nov.....	3.3869
Mar.....	3.3869	June...	3.3869	Sept...	3.3869	Dec.....	3.3869
						Average.	$3.3869

FURNITURE: Bedroom sets, 3 pieces, iron bedstead, hard-wood dresser and washstand.

[Price per set, in New York, on the first of each month.]

Jan.....	$11.25	Apr....	$11.25	July....	$10.75	Oct.....	$10.75
Feb.....	11.25	May....	11.25	Aug....	10.75	Nov.....	10.75
Mar.....	11.25	June...	11.25	Sept...	10.75	Dec.....	10.75
						Average.	$11.0000

FURNITURE: Chairs, bedroom, maple, cane seat.

[Price per dozen, in New York, on the first of each month.]

Jan.....	$10.00	Apr....	$10.00	July....	$9.00	Oct.....	$9.00
Feb.....	10.00	May....	10.00	Aug....	9.00	Nov.....	9.00
Mar.....	10.00	June...	9.00	Sept...	9.00	Dec.....	9.00
						Average.	$9.4170

FURNITURE: Chairs, kitchen, common spindle.

[Price per dozen, in New York, on the first of each month.]

Jan.....	$6.00	Apr....	$6.00	July....	$6.00	Oct.....	$6.00
Feb.....	6.00	May....	6.00	Aug....	6.00	Nov.....	6.00
Mar.....	6.00	June...	6.00	Sept...	6.00	Dec.....	6.00
						Average.	$6.0000

FURNITURE: Tables, kitchen, 3½-foot.

[Price per dozen, in New York, on the first of each month.]

Jan.....	$18.00	Apr....	$18.00	July....	$18.00	Oct.....	$18.00
Feb.....	18.00	May....	18.00	Aug....	18.00	Nov.....	18.00
Mar.....	18.00	June...	18.00	Sept...	18.00	Dec.....	18.00
						Average.	$18.0000

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

HOUSE FURNISHING GOODS—Concluded.

GLASSWARE: Nappies, 4-inch.

[Price per dozen, f. o. b. factory, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.13	Apr....	$0.13	July....	$0.13	Oct.....	$0.11
Feb.....	.13	May....	.13	Aug....	.11	Nov.....	.11
Mar.....	.13	June...	.13	Sept...	.11	Dec.....	.11
						Average.	$0.1220

GLASSWARE: Pitchers, one-half gallon, common.

[Price per dozen, f. o. b. factory, on the first of each month.]

Jan.....	$1.05	Apr....	$1.05	July....	$1.05	Oct.....	$0.84
Feb.....	1.05	May....	1.05	Aug....	.84	Nov.....	.84
Mar.....	1.05	June...	1.05	Sept...	.84	Dec.....	.84
						Average.	$0.9630

GLASSWARE: Tumblers, table, one-third pint, common.

[Price per dozen, f. o. b. factory, on the first of each month.]

Jan.....	$0.15	Apr....	$0.15	July....	$0.12	Oct.....	$0.12
Feb.....	.15	May....	.15	Aug....	.12	Nov.....	.12
Mar.....	.15	June...	.12	Sept....	.12	Dec.....	.12
						Average.	$0.1325

TABLE CUTLERY: Carvers, stag handles.

[Price per pair on the first of each month.]

Jan.....	$0.75	Apr....	$0.75	July....	$0.75	Oct.....	$0.75
Feb.....	.75	May....	.75	Aug....	.75	Nov.....	.75
Mar.....	.75	June...	.75	Sept....	.75	Dec.....	.75
						Average.	$0.7500

TABLE CUTLERY: Knives and forks, cocobolo handles, metal bolsters.

[Price per gross on the first of each month.]

Jan.....	$5.50	Apr....	$5.50	July....	$5.50	Oct.....	$5.50
Feb.....	5.50	May....	5.50	Aug....	5.50	Nov.....	5.00
Mar.....	5.50	June...	5.50	Sept....	5.50	Dec.....	5.00
						Average.	$5.4167

WOODEN WARE: Pails, oak-grained, 3-hoop, wire ear.

[Price per dozen, in New York, on the first of each month; quotations from the Merchants' Review.]

Jan.....	$2.10	Apr....	$2.10	July....	$2.10	Oct.....	$2.10
Feb.....	2.10	May....	2.10	Aug....	2.10	Nov.....	2.10
Mar.....	2.10	June...	2.10	Sept....	2.10	Dec.....	2.10
						Average.	$2.1000

WOODEN WARE: Tubs, oak-grained, 3 in nest.

[Price per nest of 3, in New York, on the first of each month; quotations from the Merchants' Review.]

Jan.....	$1.65	Apr....	$1.65	July....	$1.65	Oct.....	$1.65
Feb.....	1.65	May....	1.65	Aug....	1.65	Nov.....	1.65
Mar.....	1.65	June...	1.65	Sept....	1.65	Dec.....	1.65
						Average.	$1.6500

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

MISCELLANEOUS.

COTTON-SEED MEAL.

[Price per ton of 2,000 pounds, in New York, on the first of each month.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan	$28.60	Apr	$29.10	July	$29.60	Oct	$29.60
Feb	28.60	May	29.00	Aug	29.60	Nov	30.10
Mar	28.10	June	29.60	Sept	30.60	Dec	29.60
						Average.	$29.3917

COTTON-SEED OIL: Summer yellow, prime.

[Price per gallon, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Jan	$0.37½	Apr	$0.42	July	$0.47	Oct	$0.40
Feb	.40¼	May	.43½	Aug	.42¾	Nov	.37¼
Mar	.37	June	.47¾	Sept	.37½	Dec	.38¼
						Average.	$0.4090

JUTE: Raw, M-double triangle, shipment, medium grades.

[Price per pound, in New York, on the first of each month.]

Jan	$0.03⅞	Apr	$0.03½	July	$0.03⅞	Oct	$0.04
Feb	.03¼	May	.03⅝	Aug	.04⅛	Nov	.03½
Mar	.03¼	June	.03¾	Sept	.04⅛	Dec	.03½
						Average.	$0.0370

MALT: Western made.

[Price per bushel, in New York, on the last of each month; quotations from the Brewers' Journal.]

Jan	$1.17-$1.25	Apr	$1.03-$1.05	July	$0.85	Oct	$0.74-$0.78
Feb	1.15- 1.20	May	.99- 1.01	Aug	.85	Nov	.74- .78
Mar	1.15- 1.20	June	.80- .85	Sept	$0.79- .83	Dec	.71- .76
						Average.	$0.9325

PAPER: News, wood.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan	$0.0255-$0.0275	Apr	$0.0250-$0.0280	July	$0.0250-$0.0280	Oct	$0.0225-$0.0240
Feb	.0255- .0275	May	.0250- .0280	Aug	.0225- .0240	Nov	.0205- .0215
Mar	.0250- .0275	June	.0250- .0280	Sept	.0225- .0240	Dec	.0205- .0210
						Average.	$0.0248

PAPER: Wrapping, manila, No. 1, jute.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Jan	$0.05¼	Apr	$0.05-$0.05¼	July	$0.05-$0.05¼	Oct	$0.04¾
Feb	.05¼	May	.05- .05¼	Aug	.04¾	Nov	.04¾
Mar	.05¼	June	.05- .05¼	Sept	.04¾	Dec	.04¾
						Average.	$0.0500

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Continued.

MISCELLANEOUS—Continued.

PROOF SPIRITS.

[Price per gallon, including tax, in Peoria, Ill., on Tuesday of each week; quotations from the Peoria Herald Transcript.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$1.35	Apr....	$1.35	July....	$1.35	Oct.....	$1.37
	1.35		1.35		1.35		1.37
	1.35		1.35		1.35		1.37
	1.35		1.35		1.35		1.37
Feb.....	1.35	May....	1.35	Aug....	1.35	Nov.....	1.37
	1.35		1.35		1.35		1.37
	1.35		1.35		1.35		1.37
	1.35		1.35		1.35		1.37
Mar.....	1.35	June...	1.35	Sept...	1.35	Dec.....	1.37
	1.35		1.35		1.37		1.37
	1.35		1.35		1.37		1.37
	1.35		1.35		1.37		1.37
	1.35		1.35		1.37		1.37
						Average.	$1.3565

ROPE: Manila, base sizes.

[Price per pound, f. o. b. New York or factory, on the first of each month; quotations from the Iron Age.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.11½	Apr....	$0.10½-$0.11	July....	$0.10	Oct.....	$0.09
Feb.....	.11½	May....	.10½- .11	Aug....	$0.09½- .10	Nov.....	.09
Mar.....	$0.11- .11½	June...	.10 - .10½	Sept...	.09½	Dec.....	$0.08¾- .09
						Average.	$0.1015

RUBBER: Para Island, new.

[Price per pound, in New York, on the first of each month; quotations from the New York Journal of Commerce and Commercial Bulletin.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.76-$0.77	Apr....	$0.75-$0.75½	July....	$0.88-$0.89	Oct.....	$0.96-$0.97
Feb.....	.71- .71½	May....	.80- .81	Aug....	.85- .86	Nov.....	1.05
Mar.....	.69- .70	June...	.87- .88	Sept...	.90- .91	Dec.....	1.17- 1.20
						Average.	$0.8708

SOAP: Castile, mottled, pure.

[Price per pound, in New York, on the first of each month; quotations from the Oil, Paint, and Drug Reporter.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.07	Apr....	$0.07	July....	$0.07	Oct.....	$0.07
Feb.....	.07	May....	.07	Aug....	.07	Nov.....	.07
Mar.....	.07	June...	.07	Sept...	.07	Dec.....	.07
						Average.	$0.0700

STARCH: Laundry, Austin, Nichols & Co., 40-pound boxes, in bulk.

[Price per pound, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.04¼	Apr....	$0.04¼	July....	$0.04¼	Oct.....	$0.04½
Feb.....	.04¼	May....	.04¼	Aug....	.04¼	Nov.....	.04½
Mar.....	.04¼	June...	.04¼	Sept...	.04½	Dec.....	.04½
						Average.	$0.0433

TABLE I.—WHOLESALE PRICES OF COMMODITIES IN 1908—Concluded.

MISCELLANEOUS—Concluded.

TOBACCO: Plug, Climax.

[Price per pound, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.47	Apr....	$0.47	July....	$0.47	Oct.....	$0.47
Feb.....	.47	May....	.47	Aug....	.47	Nov.....	.47
Mar.....	.47	June...	.47	Sept...	.47	Dec.....	.47
						Average.	$0.4700

TOBACCO: Smoking, granulated, Seal of North Carolina.

[Price per pound, in New York, on the first of each month; quotations from the Merchants' Review.]

Month.	Price.	Month.	Price.	Month.	Price.	Month.	Price.
Jan.....	$0.60	Apr....	$0.60	July....	$0.60	Oct.....	$0.60
Feb.....	.60	May....	.60	Aug....	.60	Nov.....	.60
Mar.....	.60	June...	.60	Sept...	.60	Dec.....	.60
						Average.	$0.6000

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899).

[For explanation and discussion of this table, see pages 228 to 231. For a more detailed description of the articles, see Table I. Average for 1908 computed from quotations in Table I.]

Month.	Farm products.									
	Barley: by sample.		Cattle: steers, choice to extra.		Cattle: steers, good to choice.		Corn: cash.		Cotton: upland, middling.	
	Price per bushel.	Relative price.	Price per 100 pounds.	Relative price.	Price per 100 pounds.	Relative price.	Price per bushel.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899...	$0.4534	100.0	$5.3203	100.0	$4.7347	100.0	$0.3804	100.0	$0.07762	100.0
Jan................	.9960	219.7	5.9063	111.0	5.2688	111.3	.5944	156.3	.11675	150.4
Feb................	.8938	197.1	5.7813	108.7	5.3000	111.9	.5781	152.0	.11575	149.1
Mar................	.8913	196.6	6.4400	121.0	5.9950	126.6	.6355	167.1	.11020	142.0
Apr................	.8288	182.8	6.8438	128.6	6.2000	130.9	.6672	175.4	.10063	129.6
May................	.7215	159.1	6.9438	130.5	6.2625	132.3	.7463	196.2	.10963	141.2
June................	.6013	132.6	7.6350	143.5	6.6500	140.5	.7015	184.4	.11590	149.3
July................	.6860	151.3	7.2938	137.1	6.2250	131.5	.7463	196.2	.11250	144.9
Aug................	.6575	145.0	6.9300	130.3	6.0150	127.0	.7850	206.4	.10388	133.8
Sept................	.6438	142.0	6.7625	127.1	5.8750	124.1	.7960	209.3	.09320	120.1
Oct................	.6040	133.2	6.6500	125.0	5.6875	120.1	.7357	193.4	.09213	118.7
Nov................	.6300	139.0	7.0600	132.7	6.0000	126.7	.6378	167.7	.09413	121.3
Dec................	.6313	139.2	7.3500	138.2	6.3250	133.6	.5913	155.4	.09250	119.2
Average, 1908.......	.7336	161.8	6.8163	128.1	5.9976	126.7	.6843	179.9	.10463	134.8

Month.	Flaxseed: No. 1.		Hay: timothy, No. 1.		Hides: green, salted, packers', heavy native steers.		Hogs: heavy.		Hogs: light.	
	Price per bushel.	Relative price.	Price per ton.	Relative price.	Price per pound.	Relative price.	Price per 100 pounds.	Relative price.	Price per 100 pounds	Relative price.
Average, 1890-1899...	$1.1132	100.0	$10.4304	100.0	$0.0937	100.0	$4.4123	100.0	$4.4206	100.0
Jan................	1.1600	104.2	13.0625	125.2	.1116	119.1	4.4594	101.1	4.3438	98.3
Feb................	1.1425	102.6	13.5625	130.0	.1037	110.7	4.3563	98.7	4.2781	96.8
Mar................	1.1450	102.9	13.9500	133.7	.0944	100.7	5.0050	113.4	4.9075	111.0
Apr................	1.1300	101.5	13.8750	133.0	.1050	112.1	5.8188	131.9	5.7250	129.5
May................	1.1650	104.7	14.0000	134.2	.1175	125.4	5.5156	125.0	5.4500	123.3
June................	1.2100	108.7	11.2000	107.4	.1325	141.4	5.8775	133.2	5.7600	130.3
July................	1.1825	106.2	11.0625	106.1	.1500	160.1	6.6563	150.9	6.4875	146.8
Aug................	1.2275	110.3	11.2500	107.9	.1563	166.8	6.7400	152.8	6.5900	149.1
Sept................	1.2300	110.5	10.8500	104.0	.1575	168.1	7.1156	161.3	6.9750	157.8
Oct................	1.1900	106.9	11.3750	109.1	.1565	167.0	6.1438	139.2	5.8625	132.6
Nov................	1.2350	110.9	12.1875	116.8	.1581	168.7	5.9850	135.6	5.6700	128.3
Dec................	1.4050	126.2	12.0000	115.0	.1600	170.8	5.8063	131.6	5.4688	123.7
Average, 1908.......	1.2019	108.0	12.3365	118.3	.1336	142.6	5.7986	131.4	5.6346	127.5

Month.	Hops: N. Y., choice.		Horses: draft, good to choice.		Mules: 16 hands, medium to good.		Oats: cash.		Poultry: live, fowls.	
	Price per pound.	Relative price.	Price per head.	Relative price.	Price per head.	Relative price.	Price per bushel.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899...	$0.1771	100.0	....	....	....	....	$0.2688	100.0	....	....
Jan................	.1550	87.5	$196.00	(a)	$178.13	(a)	.5050	187.9	$0.1275	(a)
Feb................	.1550	87.5	197.50	(a)	190.63	(a)	.5060	188.2	.1350	(a)
Mar................	.1350	76.2	197.50	(a)	190.00	(a)	.5318	197.8	.1413	(a)
Apr................	.1150	64.9	198.50	(a)	190.00	(a)	.5244	195.1	.1403	(a)
May................	.1150	64.9	200.00	(a)	190.00	(a)	.5466	203.3	.1340	(a)
June................	.1150	64.9	199.38	(a)	190.00	(a)	.5108	190.0	.1325	(a)
July................	.0900	50.8	197.50	(a)	190.00	(a)	.5544	206.3	.1250	(a)
Aug................	.0750	42.3	197.50	(a)	190.00	(a)	.4813	179.1	.1340	(a)
Sept................	.0650	36.7	197.50	(a)	190.00	(a)	.4906	182.5	.1300	(a)
Oct................	.1350	76.2	190.00	(a)	190.00	(a)	.5775	214.8	.1380	(a)
Nov................	.1350	76.2	190.00	(a)	190.00	(a)	.5933	220.7	.1150	(a)
Dec................	.1350	76.2	190.00	(a)	190.00	(a)	.4954	184.3	.1313	(a)
Average, 1908.......	.1188	67.1	193.18	(a)	189.13	(a)	.5095	189.5	.1327	(a)

[a] No relative price computed. For explanation, see page 231.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Farm products.									
	Rye: No. 2, cash.		Sheep: wethers, good to fancy.		Sheep: wethers, plain to choice.		Tobacco: Burley, dark red, good leaf.		Wheat: regular grades, cash.	
	Price per bushel.	Relative price.	Price per 100 lbs.	Relative price.	Price per 100 lbs.	Relative price.	Price per 100 lbs.	Relative price.	Price per bushel.	Relative price.
Average, 1890-1899	$0.5288	100.0	[a]$3.7580	100.0	[b]$3.9541	100.0	....	....	$0.7510	100.0
Jan	.8400	158.9	5.1625	[c]117.1	5.1438	[d]117.2	12.5000	([e])	.9893	131.7
Feb	.8200	155.1	5.3250	[c]120.8	5.3000	[d]120.8	12.8750	([e])	.9300	123.8
Mar	.8035	151.9	6.1800	[c]140.1	6.0900	[d]138.8	13.5000	([e])	.9519	126.8
Apr	.7838	148.2	6.0563	[c]137.3	5.9009	[d]134.4	13.5000	([e])	.9355	124.6
May	.8144	154.0	5.2938	[c]120.0	5.2500	[d]119.6	13.5000	([e])	1.0200	135.8
June	.7795	147.4	4.7350	[c]107.4	4.5450	[d]103.6	14.2000	([e])	.9583	127.6
July	.7600	143.7	4.4000	[c]99.8	4.1313	[d]94.1	15.7500	([e])	.9057	120.6
Aug	.7778	147.1	4.3650	[c]99.0	4.1850	[d]95.3	16.4000	([e])	.9783	130.3
Sept	.7610	143.9	4.1813	[c]94.8	4.0438	[d]92.1	16.2500	([e])	.9968	132.7
Oct	.7506	141.9	4.5063	[c]102.2	4.3438	[d]99.0	16.5000	([e])	1.0150	135.2
Nov	.7488	141.6	4.4600	[c]101.1	4.2650	[d]97.2	17.0500	([e])	1.0422	138.8
Dec	.7578	143.3	4.7563	[c]107.9	4.5813	[d]104.4	18.5000	([e])	1.0573	140.8
Average, 1908	.7825	148.0	4.9506	112.3	4.8115	[d]109.6	15.0625	([e])	.9899	131.8

Month.	Food, etc.									
	Beans: medium, choice.		Bread: crackers, oyster.		Bread: crackers, soda.		Bread: loaf (Wash. market).		Bread, loaf, homemade (N. Y. market).	
	Price per bushel.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound before baking.	Relative price.	Price per pound before baking.	Relative price.
Average, 1890-1899	$1.6699	100.0	[f]$0.0673	100.0	$0.0718	100.0	$0.0354	100.0	$0.0317	100.0
Jan	2.2875	137.0	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Feb	2.2625	135.5	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Mar	2.3250	139.2	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Apr	2.2500	134.7	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
May	2.2000	131.7	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
June	2.4250	145.2	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
July	2.3750	142.2	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Aug	2.3750	142.2	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Sept	2.3750	142.2	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Oct	2.3500	140.7	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Nov	2.3125	138.5	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Dec	2.3000	137.7	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2
Average, 1908	2.3198	138.9	.0650	[g]133.7	.0650	90.5	.0356	100.6	.0400	126.2

[a] Sheep: native.
[b] Sheep: western.
[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $5.7461.
[d] For method of computing relative price, see pages 230 and 231; average price for 1907, $5.4206.
[e] No relative price computed. For explanation, see page 231.
[f] Bread: crackers, butter.
[g] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0650

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Food, etc.									
	Bread: loaf, Vienna (N. Y. market).		Butter: creamery, Elgin (Elgin market).		Butter: creamery, extra (N. Y. market).		Butter: dairy, New York State.		Canned goods: corn, Republic No. 2.	
	Price per pound before baking.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per dozen cans.	Relative price.
Average, 1890-1899	$0.0352	100.0	$0.2170	100.0	$0.2242	100.0	$0.2024	100.0	....	....
Jan	.0413	117.3	.3050	140.6	.3106	138.5	.2850	140.8	.9000	(a)
Feb	.0413	117.3	.3263	150.4	.3275	146.1	(b)	....	.9000	(a)
Mar	.0413	117.3	.2950	135.9	.2850	127.1	(b)	....	.9000	(a)
Apr	.0413	117.3	.2863	131.9	.2838	126.6	.2692	133.0	.9000	(a)
May	.0413	117.3	.2375	109.4	.2328	103.8	.2275	112.4	.9000	(a)
June	.0413	117.3	.2300	106.0	.2305	102.8	.2270	112.2	.9000	(a)
July	.0413	117.3	.2200	101.4	.2228	99.4	.2163	106.9	.9000	(a)
Aug	.0413	117.3	.2240	103.2	.2528	112.8	.2131	105.3	.9000	(a)
Sept	.0413	117.3	.2388	110.0	.2395	106.8	.2225	109.9	.9000	(a)
Oct	.0413	117.3	.2750	126.7	.2688	119.9	.2550	126.0	.9000	(a)
Nov	.0413	117.3	.2940	135.5	.2900	129.3	.2769	136.8	.9000	(a)
Dec	.0413	117.3	.3075	141.7	.3135	139.8	.2910	143.8	.9000	(a)
Average, 1908	.0413	117.3	.2692	124.1	.2711	120.9	.2449	121.0	.9000	(a)

Month.	Canned goods: peas, Republic No. 2.		Canned goods: tomatoes, Standard, N. J. No. 3.		Cheese: N. Y., full cream.		Coffee: Rio No. 7.		Eggs: new-laid, fancy, near-by.	
	Price per dozen cans.	Relative price.	Price per dozen cans.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per dozen.	Relative price.
Average, 1890-1899	....	....	....	....	$0.0987	100.0	$0.1313	100.0	$0.1963	100.0
Jan	$1.4000	(a)	$1.1000	(a)	.1575	159.6	.0606	46.2	.3038	154.8
Feb	1.4000	(a)	1.1000	(a)	.1575	159.6	.0631	48.1	.2775	141.4
Mar	1.4000	(a)	1.1000	(a)	.1575	159.6	.0631	48.1	.2125	108.3
Apr	1.4000	(a)	1.1000	(a)	.1481	150.1	.0606	46.2	.1813	92.4
May	1.4000	(a)	1.0500	(a)	.1450	146.9	.0606	46.2	.1881	95.8
June	1.4000	(a)	1.0000	(a)	.1265	128.2	.0644	49.0	.2055	104.7
July	1.4000	(a)	1.0000	(a)	.1119	113.4	.0638	48.6	.2375	121.0
Aug	1.3500	(a)	1.1000	(a)	.1160	117.5	.0625	47.6	.2525	128.6
Sept	1.3500	(a)	1.1000	(a)	.1210	122.6	.0606	46.2	.2840	144.7
Oct	1.3500	(a)	1.1000	(a)	.1250	126.6	.0631	48.1	.3438	175.1
Nov	1.3500	(a)	1.1000	(a)	.1310	132.7	.0650	49.5	.4150	211.4
Dec	1.4000	(a)	1.1000	(a)	.1400	141.8	.0656	50.0	.4380	223.1
Average, 1908	1.3833	(a)	1.0791	(a)	.1364	138.2	.0628	47.8	.2788	142.0

[a] No relative price computed. For explanation, see page 231.

[b] No quotation for month.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890–1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Food, etc.									
	Fish: cod, dry, bank, large.		Fish: herring, large, Nova Scotia split.		Fish: mackerel, salt, large 3s.		Fish: salmon, canned.		Flour: buckwheat.	
	Price per quintal.	Relative price.	Price per barrel.	Relative price.	Price per barrel.	Relative price.	Price per 12 cans.	Relative price.	Price per 100 lbs.	Relative price.
Average, 1890-1899	$5.5849	100.0	[a]$3.7763	100.0	$14.1306	100.0	$1.4731	100.0	$1.9428	100.0
Jan	7.3750	132.1	7.2500	[b]163.8	14.0000	99.1	2.0000	135.8	3.0500	157.0
Feb	7.3750	132.1	7.2500	[b]163.8	13.5000	95.5	2.0000	135.8	3.0000	154.4
Mar	7.3750	132.1	7.2500	[b]163.8	12.5000	88.5	1.9250	130.7	3.5000	180.2
Apr	7.5000	134.3	7.2500	[b]163.8	12.5000	88.5	1.9250	130.7	(c)	......
May	7.2500	129.8	7.2500	[b]163.8	11.5000	81.4	1.9250	130.7	(c)	......
June	7.2500	129.8	7.2500	[b]163.8	11.0000	77.8	1.9250	130.7	(c)	......
July	7.2500	129.8	7.2500	[b]163.8	10.5000	74.3	1.9250	130.7	(c)	......
Aug	7.2500	129.8	7.0000	[b]158.2	10.5000	74.3	1.9250	130.7	(c)	......
Sept	7.2500	129.8	7.0000	[b]158.2	10.2500	72.5	1.9250	130.7	(c)	......
Oct	7.2500	129.8	7.0000	[b]158.2	10.0000	70.8	1.9250	130.7	3.2000	164.7
Nov	7.2500	129.8	6.5000	[b]146.9	10.0000	70.8	1.8250	123.9	2.8250	145.4
Dec	7.2500	129.8	6.7500	[b]152.5	10.0000	70.8	1.8250	123.9	2.6250	135.1
Average, 1908	7.3021	130.7	7.0833	[b]160.1	11.3542	80.4	1.9208	130.4	3.0333	156.1

Month.	Flour: rye.		Flour: wheat, spring patents.		Flour: wheat, winter straights.		Fruit: apples, evaporated, choice.		Fruit: currants in barrels.	
	Price per barrel.	Relative price.	Price per barrel.	Relative price.	Price per barrel.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899	$3.3171	100.0	$4.2972	100.0	$3.8450	100.0	$0.0847	100.0	$0.0375	100.0
Jan	5.1250	154.5	5.6000	130.3	4.5500	118.3	.1000	118.1	.0663	176.8
Feb	5.0500	152.2	5.3688	124.9	4.3375	112.8	.0950	112.2	.0638	170.1
Mar	5.0500	152.2	5.4150	126.0	4.3750	113.8	.0913	107.8	.0613	163.5
Apr	4.8500	146.2	5.1813	120.6	4.2063	109.4	.0900	106.3	.0594	158.4
May	4.8000	144.7	5.3750	125.1	4.3250	112.5	.0838	98.9	.0588	156.8
June	4.8750	147.0	5.2500	122.2	4.1800	108.7	.0900	106.3	.0588	156.8
July	4.7000	141.7	5.3875	125.4	4.0188	104.5	.0850	100.4	.0588	156.8
Aug	4.3250	130.4	5.6000	130.3	4.0000	104.0	.0850	100.4	.0588	156.8
Sept	4.5000	135.7	5.5350	128.8	4.1450	107.8	.0825	97.4	.0644	171.7
Oct	4.3750	131.9	5.3938	125.5	4.3000	111.8	.0800	94.5	.0619	165.1
Nov	4.1500	125.1	5.4188	126.1	4.4688	116.2	.0763	90.1	.0594	158.4
Dec	5.0500	152.2	5.4900	127.8	4.5600	118.6	.0763	90.1	.0594	158.4
Average, 1908	4.7375	142.8	5.4183	126.1	4.2909	111.6	.0863	101.9	.0609	162.4

[a] Fish: herring, shore, round.
[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $7.2083.
[c] No quotation for month.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Food, etc.									
	Fruit: prunes, California.		Fruit: raisins, California, London layer.		Glucose.		Lard: prime contract.		Meal: corn, fine white.	
	Price per pound.	Relative price.	Price per box.	Relative price.	Price per 100 lbs.	Relative price.	Price per pound.	Relative price.	Price per 100 lbs.	Relative price.
Average, 1890-1899	$0.0774	100.0	$1.5006	100.0	[a]$1.4182	100.0	$0.0654	100.0	$1.0486	100.0
Jan	.0688	88.9	1.8000	120.0	2.4800	174.9	.0814	124.5	1.4750	140.7
Feb	.0675	87.2	1.8000	120.0	2.5200	177.7	.0755	115.4	1.4750	140.7
Mar	.0613	79.2	1.8000	120.0	2.5200	177.7	.0806	123.2	1.5000	143.0
Apr	.0575	74.3	1.8000	120.0	2.5200	177.7	.0846	129.4	1.6000	152.6
May	.0575	74.3	1.8000	120.0	2.4800	174.9	.0861	131.7	1.5000	143.0
June	.0575	74.3	1.8000	120.0	2.4800	174.9	.0896	137.0	1.6500	157.4
July	.0538	69.5	1.8000	120.0	2.4800	174.9	.0958	146.5	1.6250	155.0
Aug	.0538	69.5	1.8000	120.0	2.6800	189.0	.0965	147.6	1.6750	159.7
Sept	.0613	79.2	1.8500	123.3	2.8800	203.1	.1040	159.0	1.7750	169.3
Oct	.0613	79.2	1.8500	123.3	2.8800	203.1	.1000	152.9	1.7000	162.1
Nov	.0613	79.2	(b)	....	2.8800	203.1	.0973	148.8	1.7250	164.5
Dec	.0563	72.7	(b)	....	2.8800	203.1	.0961	146.9	1.6750	159.7
Average, 1908	.0598	77.3	1.8100	120.6	2.6400	186.2	.0908	138.8	1.6146	154.0

Month.	Meal: corn, fine yellow.		Meat: bacon, short clear sides.		Meat: bacon, short rib sides.		Meat: beef, fresh, carcass, good native steers (Chicago market).		Meat: beef, fresh, native sides (New York market).	
	Price per 100 lbs.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899	$1.0169	100.0	$0.0675	100.0	$0.0656	100.0	....	....	$0.0771	100.0
Jan	1.4750	145.0	.0788	116.7	.0760	115.9	$0.0938	(c)	.0857	111.2
Feb	1.4750	145.0	.0719	106.5	.0697	106.3	.0970	(c)	.0825	107.0
Mar	1.5000	147.5	.0747	110.7	.0724	110.4	.0975	(c)	.0860	111.5
Apr	1.6000	157.3	.0788	116.7	.0766	116.8	.1028	(c)	.1050	136.2
May	1.5000	147.5	.0794	117.6	.0775	118.1	.1090	(c)	.1044	135.4
June	1.6500	162.3	.0849	125.8	.0824	125.6	.1113	(c)	.1070	138.8
July	1.6250	159.8	.0960	142.2	.0932	142.1	.1144	(c)	.0994	128.9
Aug	1.6750	164.7	.0994	147.3	.0966	147.3	.1055	(c)	.0913	118.4
Sept	1.7750	174.6	.1094	162.1	.1051	160.2	.1056	(c)	.0880	114.1
Oct	1.7000	167.2	.1080	160.0	.1043	159.0	.1080	(c)	.0885	114.8
Nov	1.7250	169.6	.1041	154.2	.1002	152.7	.1063	(c)	.0916	118.8
Dec	1.6750	164.7	.0947	140.3	.0899	137.0	.1131	(c)	.0920	119.3
Average, 1908	1.6146	158.8	.0901	133.5	.0870	132.6	.1053	(c)	.0934	121.1

[a] Average for 1893-1899.

[b] No quotation for month.

[c] No relative price computed. For explanation, see page 231.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Food, etc.									
	Meat: beef, salt, extra mess.		Meat: beef, salt, hams, western.		Meat: hams, smoked.		Meat: mutton, dressed.		Meat: pork, salt, mess, old to new.	
	Price per barrel.	Relative price.	Price per barrel.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per barrel.	Relative price.
Average, 1890-1899	$8.0166	100.0	$18.0912	100.0	$0.0984	100.0	$0.0754	100.0	$11.6332	100.0
Jan	10.6875	133.3	25.5000	141.0	.0997	101.3	.0888	117.8	14.8750	127.9
Feb	10.4340	130.2	25.5000	141.0	.0956	97.2	.0925	122.7	14.1250	121.4
Mar	11.2500	140.3	26.4000	145.9	.0980	99.6	.1085	143.9	14.6250	125.7
Apr	13.0000	162.2	27.0000	149.2	.1068	108.5	.1131	150.0	15.0000	128.9
May	13.7500	171.5	27.0000	149.2	.1076	109.3	.1031	136.7	15.0000	128.9
June	14.1875	177.0	27.7000	153.1	.1168	118.7	.0930	123.3	15.6250	134.3
July	14.6575	182.8	29.0000	160.3	.1297	131.8	.0813	107.8	17.5625	151.0
Aug	14.7500	184.0	29.0000	160.3	.1291	131.2	.0794	105.3	17.3750	149.4
Sept	14.7500	184.0	30.0000	165.8	.1274	129.5	.0660	87.5	17.2750	148.5
Oct	14.1500	176.5	30.0000	165.8	.1244	126.4	.0700	92.8	16.9375	145.6
Nov	13.2500	165.3	28.1250	155.5	.1122	114.0	.0675	89.5	16.3750	140.8
Dec	13.2500	165.3	27.2000	150.3	.1040	105.7	.0730	96.8	16.6000	142.7
Average, 1908	13.1837	164.5	27.7115	153.2	.1125	114.3	.0863	114.5	15.9736	137.3

Month.	Milk: fresh.		Molasses: New Orleans, open kettle.		Poultry: dressed, fowls, western, dry picked.		Rice: domestic, choice.		Salt: American.	
	Price per quart.	Relative price.	Price per gallon.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per barrel.	Relative price.
Average, 1890-1899	$0.0255	100.0	$0.3151	100.0	....	......	$0.0561	100.0	$0.7044	100.0
Jan	.0400	156.9	.3800	120.6	$0.1319	(a)	.0619	110.3	.7720	109.6
Feb	.0375	147.1	.3800	120.6	.1350	(a)	.0619	110.3	.7600	107.9
Mar	.0350	137.3	.3500	111.1	.1375	(a)	.0619	110.3	.7400	105.1
Apr	.0313	122.7	.3500	111.1	.1463	(a)	.0619	110.3	.7400	105.1
May	.0262	102.7	.3500	111.1	.1395	(a)	.0619	110.3	.7100	100.8
June	.0225	88.2	.3500	111.1	.1375	(a)	.0619	110.3	.7100	100.8
July	.0250	98.0	.3500	111.1	.1363	(a)	.0631	112.5	.7760	110.2
Aug	.0300	117.6	.3500	111.1	.1395	(a)	.0650	115.9	.8250	117.1
Sept	.0313	122.7	.3500	111.1	.1463	(a)	.0650	115.9	.8500	120.7
Oct	.0375	147.1	.3500	111.1	.1445	(a)	.0619	110.3	.8500	120.7
Nov	.0383	150.2	.3500	111.1	.1363	(a)	.0613	109.3	.8500	120.7
Dec	.0400	156.9	.3500	111.1	.1356	(a)	.0613	109.3	.8500	120.7
Average, 1908	.0329	129.0	.3550	112.7	.1389	(a)	.0624	111.2	.7854	111.5

Month.	Soda: bicarbonate of, American.		Spices: pepper, Singapore.		Starch: pure corn.		Sugar: 89° fair refining.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899	$0.0209	100.0	$0.0749	100.0	$0.0548	100.0	$0.03398	100.0
Jan	.0130	62.2	.0838	111.9	.0600	109.5	.03352	98.6
Feb	.0130	62.2	.0788	105.2	.0600	109.5	.03244	95.5
Mar	.0115	55.0	.0788	105.2	.0600	109.5	.03606	106.1
Apr	.0115	55.0	.0763	101.9	.0600	109.5	.03898	114.7
May	.0115	55.0	.0713	95.2	.0600	109.5	.03808	112.1
June	.0115	55.0	.0713	95.2	.0600	109.5	.03830	112.7
July	.0100	47.8	.0669	89.3	.0550	100.4	.03828	112.7
Aug	.0100	47.8	.0688	91.9	.0550	100.4	.03526	103.8
Sept	.0100	47.8	.0713	95.2	.0550	100.4	.03448	101.5
Oct	.0100	47.8	.0663	88.5	.0550	100.4	.03488	102.6
Nov	.0100	47.8	.0613	81.8	.0550	100.4	.03443	101.3
Dec	.0100	47.8	.0631	84.2	.0550	100.4	.03278	96.5
Average, 1908	.0110	52.6	.0715	95.5	.0575	104.9	.03563	104.9

[a] No relative price computed. For explanation, see page 231.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Food, etc.							
	Sugar: 96° centrifugal.		Sugar: granulated.		Tallow.		Tea: Formosa, fine.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899	$0.03869	100.0	$0.04727	100.0	$0.0435	100.0	$0.2839	100.0
Jan	.03852	99.6	.04710	99.6	.0550	126.4	.2300	81.0
Feb	.03744	96.8	.04650	98.4	.0525	120.7	.2300	81.0
Mar	.04106	106.1	.04975	105.2	.0518	119.1	.2300	81.0
Apr	.04398	113.7	.05310	112.3	.0541	124.4	.2300	81.0
May	.04308	111.3	.05263	111.3	.0541	124.4	.2050	72.2
June	.04330	111.9	.05225	110.5	.0538	123.7	.2050	72.2
July	.04328	111.9	.05230	110.6	.0548	126.0	.2050	72.2
Aug	.04046	104.6	.04975	105.2	.0542	124.6	.2050	72.2
Sept	.03948	102.0	.04950	104.7	.0563	129.4	.2050	72.2
Oct	.03988	103.1	.04850	102.6	.0600	137.9	.2050	72.2
Nov	.03943	101.9	.04613	97.6	.0581	133.6	.2050	72.2
Dec	.03778	97.6	.04540	96.0	.0568	130.6	.2050	72.2
Average, 1908	.04064	105.0	.04940	104.5	.0551	126.7	.2133	75.1

Month.	Vegetables, fresh: cabbage.		Vegetables, fresh: onions.		Vegetables, fresh: potatoes, white, choice to fancy.		Vinegar: cider, Monarch.	
	Price per ton.	Relative price.	Price per barrel.	Relative price.	Price per bushel.	Relative price.	Price per gallon.	Relative price.
Average, 1890-1899	....	....	$3.3995	100.0	$0.4991	100.0	$0.1478	100.0
Jan	$10.3750	(a)	3.5000	103.0	.5960	119.4	.1800	121.8
Feb	10.5000	(a)	4.2500	125.0	.6763	135.5	.1800	121.8
Mar	8.5000	(a)	5.5000	161.8	.6800	136.2	.1800	121.8
Apr	8.8750	(a)	(b)	....	.6738	135.0	.1800	121.8
May	6.0000	(a)	(b)	....	.6600	132.2	.1800	121.8
June	(b)	(a)	(b)	....	.9650	193.3	.1800	121.8
July	(b)	(a)	(b)	....	.9230	184.9	.1900	128.6
Aug	(b)	(a)	(b)	....	.7613	152.5	.1900	128.6
Sept	18.0000	(a)	2.7500	80.9	.6913	138.5	.1900	128.6
Oct	20.0000	(a)	2.7500	80.9	.6130	122.8	.1900	128.6
Nov	21.6250	(a)	2.2500	66.2	.6450	129.2	.1900	128.6
Dec	29.3750	(a)	3.7500	110.3	.6725	134.7	.1800	121.8
Average, 1908	15.4394	(a)	3.5357	104.0	.7119	142.6	.1842	124.6

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[a] No relative price computed. For explanation, see page 231.

[b] No quotation for month.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Cloths and clothing.									
	Bags: 2-bushel, Amoskeag.		Blankets: 11-4, 5 pounds to the pair, all wool.		Blankets: 10-4, 2 pounds to the pair, 54 x 74, all cotton.		Boots and shoes: men's brogans, split.		Boots and shoes: men's vici calf shoes, Blucher bal., vici calf top, single sole.	
	Price per bag.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pair.	Relative price.	Price per pair.	Relative price.
Average, 1890-1899	$0.1399	100.0	$0.840	100.0	[a] $0.424	100.0	$0.9894	100.0	[b] $2.376	100.0
Jan	.1950	139.4	.950	113.1	.515	[c]139.1	1.1500	116.2	2.800	[d] 109.0
Feb	.2100	150.1	.950	113.1	.515	[c]139.1	1.1000	111.2	2.800	[d] 109.0
Mar	.1850	132.2	.950	113.1	.515	[c]139.1	1.0750	108.7	2.800	[d] 109.0
Apr	.1850	132.2	.950	113.1	.500	[c]135.0	1.0750	108.7	2.800	[d] 109.0
May	.1850	132.2	.950	113.1	.500	[c]135.0	1.1000	111.2	2.800	[d] 109.0
June	.1850	132.2	.950	113.1	.500	[c]135.0	1.1250	113.7	2.800	[d] 109.0
July	.1850	132.2	.950	113.1	.500	[c]135.0	1.1250	113.7	2.800	[d] 109.0
Aug	.1850	132.2	.950	113.1	.500	[c]135.0	1.1500	116.2	2.800	[d] 109.0
Sept	.1850	132.2	.950	113.1	.500	[c]135.0	1.1500	116.2	2.800	[d] 109.0
Oct	.1850	132.2	.950	113.1	.500	[c]135.0	1.1750	118.8	2.800	[d] 109.0
Nov	.1850	132.2	.950	113.1	.500	[c]135.0	1.2000	121.3	2.800	[d] 109.0
Dec	.1850	132.2	.950	113.1	.500	[c]135.0	1.2000	121.3	2.800	[d] 109.0
Average, 1908	.1879	134.3	.950	113.1	.504	[c]136.1	1.1354	114.8	2.800	[d] 109.0

Month.	Boots and shoes: men's vici kid shoes, Goodyear welt.		Boots and shoes: women's solid grain shoes.		Broadcloths: first quality, black, 54-inch, XXX wool.		Calico: American standard prints, 64 x 64.		Carpets: Brussels, 5-frame, Bigelow.	
	Price per pair.	Relative price.	Price per pair.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899	$2.3000	100.0	$0.8175	100.0	$1.732	100.0	[e]$0.0553	100.0	$1.0008	100.0
Jan	2.5000	108.7	.9750	119.3	2.020	116.6	.0665	[f]133.7	1.2480	124.7
Feb	2.5000	108.7	.9750	119.3	2.020	116.6	.0570	[f]114.6	1.2480	124.7
Mar	2.5000	108.7	.9500	116.2	2.020	116.6	.0570	[f]114.6	1.2480	124.7
Apr	2.5000	108.7	.9500	116.2	2.020	116.6	.0570	[f]114.6	1.2480	124.7
May	2.5000	108.7	.9250	113.1	2.020	116.6	.0570	[f]114.6	1.1760	117.5
June	2.5000	108.7	.9250	113.1	2.020	116.6	.0451	[f] 90.6	1.1760	117.5
July	2.5000	108.7	.9500	116.2	2.020	116.6	.0451	[f] 90.6	1.1760	117.5
Aug	2.5000	108.7	.9500	116.2	1.980	114.3	.0475	[f] 95.5	1.1760	117.5
Sept	2.5000	108.7	.9750	119.3	1.980	114.3	.0475	[f] 95.5	1.1760	117.5
Oct	2.5000	108.7	1.0000	122.3	1.980	114.3	.0475	[f] 95.5	1.1760	117.5
Nov	2.5000	108.7	1.0250	125.4	1.980	114.3	.0475	[f] 95.5	1.1760	117.5
Dec	2.5000	108.7	1.0250	125.4	1.980	114.3	.0475	[f] 95.5	1.1760	117.5
Average, 1908	2.5000	108.7	.9688	118.5	2.003	115.6	.0519	[f]104.3	1.2000	119.9

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[a] Blankets: 11-4, 5 lbs. to the pair, cotton warp, cotton and wool filling.

[b] Boots and shoes: men's calf bal. shoes, Goodyear welt, dongola top.

[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.524.

[d] For method of computing relative price, see pages 230 and 231; average price for 1907, $2.80.

[e] Calico: Cocheco prints.

[f] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0602.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Cloths and clothing.									
	Carpets: ingrain, 2-ply, Lowell.		Carpets: Wilton, 5-frame, Bigelow.		Cotton flannels: 2¾ yards to the pound.		Cotton flannels: 3½ yards to the pound.		Cotton thread: 6-cord, 200-yard spools, J. & P. Coats.	
	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per spool.	Relative price.
Average, 1890-1899	$0.4752	100.0	$1.8432	100.0	$0.0706	100.0	$0.0575	100.0	$0.031008	100.0
Jan	.5760	121.2	2.2800	123.7	.0900	127.5	.0750	130.4	.045080	145.4
Feb	.5760	121.2	2.2800	123.7	.0900	127.5	.0750	130.4	.045080	145.4
Mar	.5760	121.2	2.2800	123.7	.0875	123.9	.0725	126.1	.040180	129.6
Apr	.5760	121.2	2.2800	123.7	.0875	123.9	.0725	126.1	.040180	129.6
May	.5520	116.2	2.1840	118.5	.0850	120.4	.0700	121.7	.040180	129.6
June	.5520	116.2	2.1840	118.5	.0850	120.4	.0700	121.7	.040180	129.6
July	.5520	116.2	2.1840	118.5	.0825	116.9	.0675	117.4	.040180	129.6
Aug	.5520	116.2	2.1840	118.5	.0825	116.9	.0675	117.4	.040180	129.6
Sept	.5520	116.2	2.1840	118.5	.0775	109.8	.0675	117.4	.040180	129.6
Oct	.5280	111.1	2.1840	118.5	.0775	109.8	.0675	117.4	.040180	129.6
Nov	.5280	111.1	2.1840	118.5	.0750	106.2	.0650	113.0	.039200	126.4
Dec	.5280	111.1	2.1840	118.5	.0750	106.2	.0650	113.0	.039200	126.4
Average, 1908	.5540	116.6	2.2160	120.2	.0829	117.4	.0696	121.0	.040833	131.7

Month.	Cotton yarns: carded, white, mule-spun, northern, cones, 10/1.		Cotton yarns: carded, white, mule-spun, northern, cones, 22/1.		Denims: Amoskeag.		Drillings: brown, Pepperell.		Drillings: 30-inch, Stark A.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899	$0.1608	100.0	$0.1969	100.0	$0.1044	100.0	$0.0572	100.0	$0.0521	100.0
Jan	.2000	124.4	.2350	119.3	.1250	119.7	.0725	126.7	.0772	148.2
Feb	.1950	121.3	.2175	110.5	.1250	119.7	.0725	126.7	.0786	150.9
Mar	.1900	118.2	.2300	116.8	.1250	119.7	.0725	126.7	.0746	143.2
Apr	.1825	113.5	.1925	97.8	.1200	114.9	.0700	122.4	.0688	132.1
May	.1775	110.4	.2000	101.6	.1200	114.9	.0700	122.4	.0726	139.3
June	.1700	105.7	.1975	100.3	.1100	105.4	.0700	122.4	.0693	133.0
July	.1700	105.7	.2000	101.6	.1100	105.4	.0700	122.4	.0717	137.6
Aug	.1700	105.7	.2150	109.2	.1100	105.4	.0700	122.4	.0698	134.0
Sept	.1675	104.2	.2100	106.7	.1100	105.4	.0700	122.4	.0695	133.4
Oct	.1675	104.2	.2125	107.9	.1100	105.4	.0700	122.4	.0705	135.3
Nov	.1725	107.3	.2100	106.7	.1100	105.4	.0700	122.4	.0698	134.0
Dec	.1700	105.7	.2050	104.1	.1175	112.5	.0700	122.4	.0691	132.6
Average, 1908	.1777	110.5	.2104	106.9	.1160	111.1	.0706	123.4	.0718	137.8

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890–1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Cloths and clothing.									
	Flannels: white, 4-4, Ballard Vale No. 3.		Ginghams: Amoskeag.		Ginghams: Lancaster.		Horse blankets: 6 pounds each, all wool.		Hosiery: men's cotton half hose, seamless, fast black, 20 to 22 ounce, 160 needles.	
	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per pound.	Relative price.	Price per 12 pairs.	Relative price.
Average, 1890–1899	$0.3768	100.0	$0.0533	100.0	$0.0573	100.0	$0.573	100.0	[a]$0.9555	100.0
Jan	.4687	124.4	.0600	112.6	.0675	117.8	.725	126.5	.7500	[b]88.9
Feb	.4687	124.4	.0575	107.9	.0650	113.4	.725	126.5	.7500	[b]88.9
Mar	.4687	124.4	.0600	112.6	.0650	113.4	.725	126.5	.7500	[b]88.9
Apr	.4687	124.4	.0600	112.6	.0650	113.4	.725	126.5	.7500	[b]88.9
May	.4687	124.4	.0600	112.6	.0650	113.4	.725	126.5	.7500	[b]88.9
June	.4557	120.9	.0500	93.8	.0500	87.3	.725	126.5	.7500	[b]88.9
July	.4557	120.9	.0500	93.8	.0500	87.3	.725	126.5	.7500	[b]88.9
Aug	.4557	120.9	.0500	93.8	.0500	87.3	.725	126.5	.7500	[b]88.9
Sept	.4557	120.9	.0500	93.8	.0500	87.3	.725	126.5	.7500	[b]88.9
Oct	.4557	120.9	.0500	93.8	.0500	87.3	.725	126.5	.7500	[b]88.9
Nov	.4557	120.9	.0550	103.2	.0550	96.0	.725	126.5	.7500	[b]88.9
Dec	.4557	120.9	.0550	103.2	.0550	96.0	.725	126.5	.7500	[b]88.9
Average, 1908	.4611	122.4	.0548	102.8	.0573	100.0	.725	126.5	.7500	[b]88.9

Month.	Hosiery: women's cotton hose, combed peeler yarn, high spliced heel.		Hosiery: women's cotton hose, seamless, fast black, 26-ounce, 176 needles.		Leather: harness, oak, packers' hides, heavy No. 1.		Leather: sole, hemlock.		Leather: sole, oak.	
	Price per 12 pairs.	Relative price.	Price per 12 pairs.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890–1899	[c]$1.850	100.0	[d]$0.9310	100.0	[e]$0.2590	100.0	$0.1939	100.0	$0.3363	100.0
Jan	1.775	95.9	.8000	[f]84.2	.3600	[g]124.2	.2650	136.7	.3850	114.5
Feb	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2500	128.9	.3850	114.5
Mar	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2500	128.9	.3800	113.0
Apr	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2500	128.9	.3700	110.0
May	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2400	123.8	.3750	111.5
June	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2400	123.8	.3750	111.5
July	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2400	123.8	.3750	111.5
Aug	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2550	131.5	.3800	113.0
Sept	1.775	95.9	.8000	[f]84.2	.3450	[g]119.1	.2550	131.5	.3800	113.0
Oct	1.775	95.9	.8000	[f]84.2	.3600	[g]124.2	.2550	131.5	.3800	113.0
Nov	1.775	95.9	.8000	[f]84.2	.3600	[g]124.2	.2550	131.5	.3800	113.0
Dec	1.775	95.9	.8000	[f]84.2	.3700	[g]127.7	.2550	131.5	.3950	117.5
Average, 1908	1.775	95.9	.8000	[f]84.2	.3508	[g]121.1	.2508	129.3	.3800	113.0

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[a] Hosiery: men's cotton half hose, seamless, fast black, 20 to 22 ounce.

[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.80.

[c] Average for 1893–1899.

[d] Hosiery: women's cotton hose, seamless, fast black, 26 to 28 ounce.

[e] Leather: harness, oak, country middles, 14 pounds and up (except overweights, 20 pounds and up).

[f] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.85.

[g] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.3738.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Cloths and clothing.									
	Leather: chrome calf, glazed finish, B grade.		Linen shoe thread: 10s., Barbour.		Overcoatings: chinchilla, cotton warp, C. C. grade.		Overcoatings: covert cloth, light weight, staple.		Overcoatings: Kersey, standard, 28-ounce.	
	Price per sq. foot.	Relative price.	Price per pound.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899..	[a]$0.6545	100.0	$0.8748	100.0	$0.4883	100.0	$2.3286	100.0	[b]$1.2472	100.0
Jan.................	.2250	[c]117.1	.8930	102.1	.4550	93.2	2.2568	96.9	1.8500	148.3
Feb.................	.2250	[c]117.1	.8930	102.1	.4400	90.1	2.2568	96.9	1.8500	148.3
Mar.................	.2250	[c]117.1	.8930	102.1	.4400	90.1	2.2568	96.9	1.8500	148.3
Apr.................	.2250	[c]117.1	.8930	102.1	.4400	90.1	2.2568	96.9	1.8500	148.3
May.................	.2150	[c]111.9	.8930	102.1	.4400	90.1	2.2568	96.9	1.8500	148.3
June................	.2150	[c]111.9	.8930	102.1	.4400	90.1	2.2568	96.9	1.8500	148.3
July................	.2150	[c]111.9	.8930	102.1	.4300	88.1	2.2568	96.9	1.8500	148.3
Aug.................	.2150	[c]111.9	.8930	102.1	.4250	87.0	2.2568	96.9	1.8500	148.3
Sept................	.2150	[c]111.9	.8930	102.1	.4300	88.1	2.2568	96.9	1.8500	148.3
Oct.................	.2150	[c]111.9	.8930	102.1	.4250	87.0	2.2568	96.9	1.8500	148.3
Nov.................	.2150	[c]111.9	.8930	102.1	.4250	87.0	2.2568	96.9	1.8500	148.3
Dec.................	.2150	[c]111.9	.8930	102.1	.4250	87.0	2.2568	96.9	1.8500	148.3
Average, 1908.......	.2183	[c]113.6	.8930	102.1	.4346	89.0	2.2568	96.9	1.8500	148.3

Month.	Print cloths: 28-inch, 64x64.		Sheetings: bleached, 9-4, Atlantic.		Sheetings: bleached, 10-4, Pepperell.		Sheetings: bleached, 10-4, Wamsutta S. T.		Sheetings: brown, 4-4, Indian Head.	
	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899..	$0.028380	100.0	$[d]0.1836	100.0	$0.1884	100.0	$0.2949	100.0	$0.0626	100.0
Jan.................	.041250	145.3	.2780	[e]161.3	.3000	159.2	.3150	106.8	.0850	135.8
Feb.................	.038000	133.9	.2779	[e]161.2	.2500	132.7	.3000	101.7	.0850	135.8
Mar.................	.034688	122.2	.2779	[e]161.2	.2500	132.7	.3000	101.7	.0800	127.8
Apr.................	.032500	114.5	.2561	[e]148.6	.2500	132.7	.3000	101.7	.0800	127.8
May.................	.032000	112.8	.2586	[e]150.0	.2500	132.7	.3000	101.7	.0800	127.8
June................	.032500	114.5	.2578	[e]149.6	.2300	122.1	.2625	89.0	.0750	119.8
July................	.032500	114.5	([f])	....	.2300	122.1	.2625	89.0	.0750	119.8
Aug.................	.030750	108.4	.2130	[e]123.6	.2300	122.1	.2625	89.0	.0750	119.8
Sept................	.030000	105.7	.2060	[e]119.5	.2300	122.1	.2625	89.0	.0750	119.8
Oct.................	.030750	108.4	.2040	[e]118.3	.2300	122.1	.2625	89.0	.0750	119.8
Nov.................	.033125	116.7	.1977	[e]114.7	.2400	127.4	.2625	89.0	.0725	115.8
Dec.................	.034375	121.1	.2021	[e]117.2	.2400	127.4	.2625	89.0	.0775	123.8
Average, 1908.......	.033486	118.0	.2390	[e]138.7	.2442	129.6	.2794	94.7	.0779	124.4

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[a] Leather: wax calf, 30 to 40 lbs. to the dozen, B grade.
[b] Average for 1897-1899.
[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.2250.
[d] Sheetings: bleached, 10-4, Atlantic.
[e] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.2315.
[f] No quotations for month.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Cloths and clothing.									
	Sheetings: brown, 4-4, Lawrence L. L.		Sheetings: brown, 4-4, Pepperell R.		Shirtings: bleached, 4-4, Fruit of the Loom.		Shirtings: bleached, 4-4, Lonsdale.		Shirtings: bleached, 4-4, Wamsutta <o> XX.	
	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899	[a]$0.0525	100.0	$0.0551	100.0	$0.0728	100.0	$0.0727	100.0	$0.0948	100.0
Jan	.0600	[b]117.9	.0775	140.7	.1200	164.8	.1000	137.6	.1250	131.9
Feb	.0575	[b]113.0	.0700	127.0	.0950	130.5	.0925	127.2	.1250	131.9
Mar	.0550	[b]108.0	.0700	127.0	.0950	130.5	.0925	127.2	.1250	131.9
Apr	.0525	[b]103.1	.0709	127.0	.0950	130.5	.0925	127.2	.1250	131.9
May	.0500	[b]98.2	.0650	118.0	.0950	130.5	.0925	127.2	.1250	131.9
June	.0500	[b]98.2	.0675	122.5	.0825	113.3	.0800	110.0	.1025	108.1
July	.0488	[b]95.9	.0675	122.5	.0850	116.8	.0825	113.5	.1025	108.1
Aug	.0500	[b]98.2	.0675	122.5	.0850	116.8	.0825	113.5	.1025	108.1
Sept	.0500	[b]98.2	.0675	122.5	.0850	116.8	.0825	113.5	.1025	108.1
Oct	.0488	[b]95.9	.0675	122.5	.0850	116.8	.0825	113.5	.1025	108.1
Nov	.0500	[b]98.2	.0650	118.0	.0850	116.8	.0825	113.5	.1025	108.1
Dec	.0500	[b]98.2	.0650	118.0	.0875	120.2	.0850	116.9	.1025	108.1
Average, 1908	.0519	[b]102.0	.0683	124.0	.0913	125.4	.0873	120.1	.1119	118.0

Month.	Shirtings: bleached, 4-4, Williamsville A1.		Silk: raw, Italian, classical.		Silk: raw, Japan, filatures.		Suitings: clay worsted diagonal, 12-ounce, Wash. Mills.		Suitings: clay worsted diagonal, 16-ounce, Wash. Mills.	
	Price per yard.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899	$0.0876	100.0	$4.2558	100.0	$4.0187	100.0	[c]$0.8236	100.0	[c]$1.0068	100.0
Jan	.1200	137.0	5.0738	119.2	4.0498	100.8	1.1700	142.1	1.3950	138.6
Feb	.1000	114.2	4.3808	102.9	4.0498	100.8	1.1700	142.1	1.3950	138.6
Mar	.1000	114.2	3.9848	93.6	3.7588	93.5	1.1700	142.1	1.3950	138.6
Apr	.1000	114.2	3.6878	86.7	3.5648	88.7	1.1700	142.1	1.3950	138.6
May	.0875	99.9	3.8363	90.1	3.4678	86.3	1.1700	142.1	1.3950	138.6
June	.0875	99.9	3.8858	91.3	3.5648	88.7	1.1700	142.1	1.3950	138.6
July	.0875	99.9	3.9848	93.6	4.0013	99.6	1.0575	128.4	1.2825	127.4
Aug	.0875	99.9	4.1580	97.7	4.0013	99.6	1.0575	128.4	1.2825	127.4
Sept	.0875	99.9	4.2075	98.9	4.0498	100.8	1.0575	128.4	1.2825	127.4
Oct	.0875	99.9	4.2570	100.0	4.0498	100.8	1.0575	128.4	1.2825	127.4
Nov	.0900	102.7	4.2075	98.9	4.0255	100.2	1.0575	128.4	1.2825	127.4
Dec	.0900	102.7	4.5045	105.8	4.0983	102.0	1.0575	128.4	1.2825	127.4
Average, 1908	.0938	107.1	4.1807	98.2	3.8902	96.8	1.1138	135.2	1.3388	133.0

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[a] Sheetings: brown, 4-4, Stark A. A.

[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0647.

[c] Average for 1895-1899.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890–1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Cloths and clothing.

Month.	Suitings: indigo blue, all wool, 54-in., 14-oz., Middlesex.		Suitings: serge, Washington Mills 6700.		Tickings: Amoskeag A. C. A.		Trouserings: fancy worsted, 19 to 20 ounce.		Underwear: shirts and drawers, white, all wool, etc.	
	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per 12 garments.	Relative price.
Average, 1890-1899	$1.3230	100.0	[a]$0.7526	100.0	$0.1061	100.0	[b]$1.9456	100.0	$23.31	100.0
Jan	1.5750	119.0	1.0575	140.5	.1200	113.1	2.4750	[c]123.7	27.00	115.8
Feb	1.5750	119.0	1.0575	140.5	.1200	113.1	2.4750	[c]123.7	27.00	115.8
Mar	1.5750	119.0	1.0575	140.5	.1200	113.1	2.4750	[c]123.7	27.00	115.8
Apr	1.5750	119.0	1.0575	140.5	.1200	113.1	2.4750	[c]123.7	27.00	115.8
May	1.5750	119.0	1.0575	140.5	.1200	113.1	2.4750	[c]123.7	27.00	115.8
June	1.5750	119.0	1.0575	140.5	.1050	99.0	2.4750	[c]123.7	27.00	115.8
July	1.5750	119.0	.9225	122.6	.1050	99.0	2.4750	[c]123.7	27.00	115.8
Aug	1.5750	119.0	.9225	122.6	.1050	99.0	2.4750	[c]123.7	27.00	115.8
Sept	1.5750	119.0	.9225	122.6	.1050	99.0	2.4750	[c]123.7	27.00	115.8
Oct	1.5750	119.0	.9225	122.6	.1050	99.0	2.4750	[c]123.7	27.00	115.8
Nov	1.5750	119.0	.9225	122.6	.1125	106.0	2.5875	[c]129.3	27.00	115.8
Dec	1.5750	119.0	.9675	128.6	.1125	106.0	2.5875	[c]129.3	27.00	115.8
Average, 1908	1.5750	119.0	.9938	132.0	.1125	106.0	2.4938	[c]124.6	27.00	115.8

Month.	Underwear: shirts and drawers, white, merino, 60 per cent wool, etc.		Women's dress goods: cashmere, all wool, 8-9 twill, 35-inch, Atlantic Mills.		Women's dress goods: cashmere, cotton warp, 9-twill, 4-4, Atlantic Mills F.		Women's dress goods: cashmere, cotton warp, 36-inch, Hamilton.		Women's dress goods: Panama cloth, 54-inch.	
	Price per 12 garments.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per yard.	Relative price.
Average, 1890-1899	[d]$15.57	100.0	[e]$0.2905	100.0	$0.1520	100.0	[f]$0.0883	100.0	[g]$0.5151	100.0
Jan	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1960	[j]127.8	.6983	[k]126.8
Feb	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1960	[j]127.8	.6983	[k]126.8
Mar	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1960	[j]127.8	.6983	[k]126.8
Apr	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8
May	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8
June	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8
July	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8
Aug	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8
Sept	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8
Oct	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1862	[j]121.4	.6983	[k]126.8
Nov	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1862	[j]121.4	.6983	[k]126.8
Dec	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1862	[j]121.4	.6983	[k]126.8
Average, 1908	18.00	[h]106.0	.3185	[i]127.1	.2107	138.6	.1911	[j]124.6	.6983	[k]126.8

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[a] Average for 1892–1899.

[b] Average for 1892–1899; 22 to 23 ounce.

[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $2.4469.

[d] 52 per cent wool and 48 per cent cotton.

[e] Women's dress goods: cashmere, all wool, 10–11 twill, 38-inch, Atlantic J.

[f] Women's dress goods: cashmere, cotton warp, 27-inch, Hamilton.

[g] Women's dress goods: Franklin sackings 6–4.

[h] For method of computing relative price, see pages 230 and 231; average price for 1907, $18.00.

[i] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.3381.

[j] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.1960.

[k] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.6983.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Cloths and clothing.									
	Women's dress goods: poplar cloth, cotton warp and worsted filling, 36-inch.		Women's dress goods: Sicilian cloth, cotton warp, 50-inch.		Wool: Ohio, fine fleece (X and XX grade), scoured.		Wool: Ohio, medium fleece (¼ and ⅜ grade), scoured.		Worsted yarns, 2-40s, Australian fine.	
	Price per yard.	Relative price.	Price per yard.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative. price.
Average, 1890-1899	[a]$0.0758	100.0	[b]$0.0680	100.0	$0.5526	100.0	$0.4564	100.0	$1.0183	100.0
Jan	.2000	[c]115.4	.3491	[d]124.9	.7021	127.1	.5000	109.6	1.2700	124.7
Feb	.2000	[c]115.4	.3491	[d]124.9	.7021	127.1	.4865	106.6	1.2500	122.8
Mar	.2000	[c]115.4	.3491	[d]124.9	.7021	127.1	.4865	106.6	1.2200	119.8
Apr	.2000	[c]115.4	.3491	[d]124.9	.7021	127.1	.4865	106.6	1.2200	119.8
May	.2000	[c]115.4	.3491	[d]124.9	.7021	127.1	.4730	103.6	1.2200	119.8
June	.2000	[c]115.4	.3491	[d]124.9	.7021	127.1	.4730	103.6	1.2000	117.8
July	.2000	[c]115.4	.3491	[d]124.9	.7234	130.9	.4865	106.6	1.2200	119.8
Aug	.2000	[c]115.4	.3491	[d]124.9	.7234	130.9	.4865	106.6	1.2200	119.8
Sept	.1900	[c]109.6	.3491	[d]124.9	.7234	130.9	.5000	109.6	1.2200	119.8
Oct	.1900	[c]109.6	.3491	[d]124.9	.7234	130.9	.5000	109.6	1.2200	119.8
Nov	.1900	[c]109.6	.3491	[d]124.9	.7447	134.8	.5000	109.6	1.2500	122.8
Dec	.1900	[c]109.6	.3491	[d]124.9	.7447	134.8	.5000	109.6	1.2500	122.8
Average, 1908	.1967	[c]113.5	.3491	[d]124.9	.7163	129.6	.4899	107.3	1.2300	120.8

Month.	Cloths and clothing.		Fuel and lighting.							
	Worsted yarns: 2-32s, crossbred stock, white, in skeins.		Candles: adamantine, 6s, 14-ounce.		Coal: anthracite, broken.		Coal: anthracite, chestnut.		Coal: anthracite, egg.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per ton.	Relative price.	Price per ton.	Relative price.	Price per ton.	Relative price.
Average, 1890-1899	[e]$1.0071	100.0	$0.0782	100.0	$3.3669	100.0	$3.5953	100.0	$3.5936	100.0
Jan	.8800	[f]125.5	.0750	95.9	4.2071	125.0	4.9470	137.6	4.9504	137.8
Feb	.8800	[f]125.5	.0750	95.9	4.2068	124.9	4.9500	137.7	4.9500	137.7
Mar	.8800	[f]125.5	.0750	95.9	4.2000	124.7	4.9500	137.7	4.9500	137.7
Apr	.8000	[f]114.1	.0725	92.7	4.2000	124.7	4.4500	123.8	4.4500	123.8
May	.8000	[f]114.1	.0725	92.7	4.2018	124.8	4.5343	126.1	4.5327	126.1
June	.7600	[f]108.4	.0725	92.7	4.2059	124.9	4.6469	129.2	4.6463	129.3
July	.7600	[f]108.4	.0725	92.7	4.2006	124.8	4.7377	131.8	4.7475	132.1
Aug	.7600	[f]108.4	.0725	92.7	4.2000	124.7	4.8439	134.7	4.8285	134.4
Sept	.7600	[f]108.4	.0725	92.7	4.2000	124.7	4.9398	137.4	4.9384	137.4
Oct	.7600	[f]108.4	.0725	92.7	4.2000	124.7	4.9492	137.7	4.9500	137.7
Nov	.7600	[f]108.4	.0725	92.7	4.2000	124.7	4.9502	137.7	4.9500	137.7
Dec	.8200	[f]117.0	.0725	92.7	4.2000	124.7	4.9486	137.6	4.9500	137.7
Average, 1908	.8017	[f]114.4	.0731	93.5	4.2019	124.8	4.8206	134.1	4.8203	134.1

[a] Women's dress goods: cashmere, cotton warp, 22-inch, Hamilton.
[b] Women's dress goods: alpaca, cotton warp, 22-inch, Hamilton.
[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.1908.
[d] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.3491.
[e] Worsted yarns: 2-40s XXXX, white, in skeins.
[f] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.90.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890–1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Fuel and lighting.									
	Coal: anthracite, stove.		Coal: bituminous, Georges Creek (at mine).		Coal: bituminous, Georges Creek (f. o. b. N. Y. Harbor).		Coal: bituminous, Pittsburg (Youghiogheny).		Coke: Connellsville, furnace.	
	Price per ton.	Relative price.	Price per ton.	Relative price.	Price per ton.	Relative price.	Price per bushel.	Relative price.	Price per ton.	Relative price.
Average, 1890–1899	$3.7940	100.0	$0.8887	100.0	$2.7429	100.0	$0.0643	100.0	$1.6983	100.0
Jan	4.9503	130.4	1.5000	168.8	3.1500	114.8	.0863	134.2	2.1250	125.1
Feb	4.9500	130.4	1.5000	168.8	3.1000	113.0	.0850	132.2	1.7250	101.6
Mar	4.9500	130.4	1.5000	168.8	3.1000	113.0	.0850	132.2	1.8250	107.5
Apr	4.4510	117.3	1.5000	168.8	3.1000	113.0	.0850	132.2	1.6000	94.2
May	4.5357	119.5	1.4000	157.5	3.0000	109.4	.0850	132.2	1.5500	91.3
June	4.6453	122.4	1.4000	157.5	3.0500	111.2	.0850	132.2	1.6250	95.7
July	4.7469	125.1	1.3500	151.9	3.0500	111.2	.0850	132.2	1.6000	94.2
Aug	4.8497	127.8	1.4000	157.5	3.0500	111.2	.0850	132.2	1.6250	95.7
Sept	4.9459	130.3	1.4000	157.5	3.0500	111.2	.0850	132.2	1.5000	88.3
Oct	4.9483	130.4	1.4500	163.2	3.1000	113.0	.0850	132.2	1.5000	88.3
Nov	4.9500	130.4	1.4500	163.2	3.1000	113.0	.0850	132.2	1.8250	107.5
Dec	4.9486	130.4	1.4500	163.2	3.1000	113.0	.0850	132.2	2.0000	117.8
Average, 1908	4.8226	127.1	1.4417	162.2	3.0792	112.3	.0851	132.3	1.7083	100.6

Month.	Fuel and lighting.								Metals and implements.	
	Matches: parlor, domestic.		Petroleum: crude.		Petroleum: refined, for export.		Petroleum: refined, 150° fire test, w. w.		Augers: extra, 1-inch.	
	Price per gross of boxes (200s).	Relative price.	Price per barrel.	Relative price.	Price per gallon.	Relative price.	Price per gallon.	Relative price.	Price per auger.	Relative price.
Average, 1890–1899	$1.7563	100.0	$0.9102	100.0	$0.0649	100.0	$0.0890	100.0	[a]$0.1608	100.0
Jan	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
Feb	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
Mar	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
Apr	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
May	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
June	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
July	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
Aug	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
Sept	1.5000	85.4	1.7800	195.6	.0875	134.8	.1350	151.7	.4200	[b] 223.9
Oct	1.5000	85.4	1.7800	195.6	.0850	131.0	.1350	151.7	.4200	[b] 223.9
Nov	1.5000	85.4	1.7800	195.6	.0850	131.0	.1350	151.7	.4200	[b] 223.9
Dec	1.5000	85.4	1.7800	195.6	.0850	131.0	.1350	151.7	.4200	[b] 223.9
Average, 1908	1.5000	85.4	1.7800	195.6	.0869	133.9	.1350	151.7	.4200	[b] 223.9

[a] Augers: extra, ¾-inch.

[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.42.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Metals and implements.									
	Axes: M. C. O., Yankee.		Bar iron: best refined, from store (Philadelphia market).		Bar iron: common to best refined (Pittsburg market).		Barb wire: galvanized.		Butts: loose pin, wrought steel, 3½ x 3½ inch.	
	Price per ax.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per 100 pounds.	Relative price.	Price per pair.	Relative price.
Average, 1890-1899	$0.4693	100.0	$0.0164	100.0	[a]$0.0145	100.0	$2.5261	100.0	[b]$0.0316	100.0
Jan	.6800	144.9	.0176	107.3	.0160	[c]120.0	2.6800	106.1	.0900	[d]126.6
Feb	.6800	144.9	.0176	107.3	.0140	[c]105.0	2.6800	106.1	.0900	[d]126.6
Mar	.6800	144.9	.0176	107.3	.0149	[c]111.8	2.6800	106.1	.0900	[d]126.6
Apr	.6800	144.9	.0176	107.3	.0149	[c]111.8	2.6800	106.1	.0900	[d]126.6
May	.6800	144.9	.0176	107.3	.0149	[c]111.8	2.6800	106.1	.0900	[d]126.6
June	.6800	144.9	.0166	101.2	.0149	[c]111.8	2.5800	102.1	.0900	[d]126.6
July	.6800	144.9	.0166	101.2	.0140	[c]105.0	2.5800	102.1	.0900	[d]126.6
Aug	.6800	144.9	.0166	101.2	.0140	[c]105.0	2.5800	102.1	.0900	[d]126.6
Sept	.6800	144.9	.0166	101.2	.0140	[c]105.0	2.5800	102.1	.0900	[d]126.6
Oct	.6800	144.9	.0166	101.2	.0140	[c]105.0	2.5800	102.1	.0900	[d]126.6
Nov	.6800	144.9	.0166	101.2	.0140	[c]105.0	2.5800	102.1	.0900	[d]126.6
Dec	.6800	144.9	.0166	101.2	.0150	[c]112.5	2.5800	102.1	.0900	[d]126.6
Average, 1908	.6800	144.9	.0170	103.7	.0146	[c]109.5	2.6217	103.8	.0900	[d]126.6

Month.	Chisels: extra, socket firmer, 1-inch.		Copper: ingot, electrolytic.		Copper: sheet, hot-rolled (base sizes).		Copper wire: bare.		Doorknobs: steel, bronze plated.	
	Price per chisel.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pair.	Relative price.
Average, 1890-1899	$0.1894	100.0	[e]$0.1234	100.0	$0.1659	100.0	$0.1464	100.0	$0.1697	100.0
Jan	.3750	198.0	.1388	[f]115.0	.2000	120.6	.1650	112.7	.4000	235.7
Feb	.3750	198.0	.1363	[f]112.9	.2000	120.6	.1650	112.7	.4000	235.7
Mar	.3750	198.0	.1256	[f]104.1	.1700	102.5	.1450	99.0	.4000	235.7
Apr	.3750	198.0	.1300	[f]107.7	.1700	102.5	.1475	100.8	.4000	235.7
May	.3750	198.0	.1265	[f]104.8	.1700	102.5	.1475	100.8	.4000	235.7
June	.3750	198.0	.1269	[f]105.2	.1700	102.5	.1475	100.8	.4000	235.7
July	.3750	198.0	.1269	[f]105.2	.1700	102.5	.1475	100.8	.4000	235.7
Aug	.3750	198.0	.1350	[f]111.9	.1700	102.5	.1450	99.0	.4000	235.7
Sept	.3750	198.0	.1375	[f]113.9	.1800	108.5	.1525	104.2	.4000	235.7
Oct	.3750	198.0	.1355	[f]112.3	.1800	108.5	.1525	104.2	.4000	235.7
Nov	.3750	198.0	.1381	[f]114.4	.1800	108.5	.1500	102.5	.4000	235.7
Dec	.3750	198.0	.1438	[f]119.2	.1900	114.5	.1575	107.6	.4000	235.7
Average, 1908	.3750	198.0	.1334	[f]110.5	.1792	108.0	.1519	103.8	.4000	235.7

[a] Bar iron: best refined, from mill (Pittsburg market).
[b] Butts: loose joint, cast, 3 x 3 inch.
[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0175.
[d] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.09.
[e] Copper: ingot, lake.
[f] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.2078.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Metals and implements.									
	Files: 8-inch mill bastard.		Hammers: Maydole No. 1½.		Lead: pig.		Lead: pipe.		Locks: common mortise.	
	Price per dozen.	Relative price.	Price per hammer.	Relative price.	Price per pound.	Relative price.	Price per 100 pounds.	Relative price.	Price per lock.	Relative price.
Average, 1890-1899..	$0.8527	100.0	$0.3613	100.0	$0.0381	100.0	$4.8183	100.0	$0.0817	100.0
Jan	.9700	113.8	.4660	129.0	.0370	97.1	4.6800	97.1	.1660	203.2
Feb	.9700	113.8	.4660	129.0	.0378	99.2	4.2500	88.2	.1660	203.2
Mar	.9700	113.8	.4660	129.0	.0375	98.4	4.2500	88.2	.1660	203.2
Apr	.9700	113.8	.4660	129.0	.0400	105.0	4.3500	90.3	.1660	203.2
May	.9600	112.6	.4660	129.0	.0420	110.2	4.6000	95.5	.1660	203.2
June	.9600	112.6	.4660	129.0	.0430	112.9	4.7500	98.6	.1660	203.2
July	.9500	111.4	.4660	129.0	.0450	118.1	5.0000	103.8	.1660	203.2
Aug	.9400	110.2	.4660	129.0	.0460	120.7	5.0000	103.8	.1660	203.2
Sept	.9400	110.2	.4660	129.0	.0459	120.5	5.1000	105.8	.1660	203.2
Oct	.9400	110.2	.4660	129.0	.0453	118.9	5.1000	105.8	.1660	203.2
Nov	.9400	110.2	.4660	129.0	.0438	115.0	5.0000	103.8	.1660	203.2
Dec	.9400	110.2	.4660	129.0	.0434	113.9	4.8000	99.6	.1660	203.2
Average, 1908	.9542	111.9	.4660	129.0	.0422	110.8	4.7400	98.4	.1660	203.2

Month.	Nails: cut, 8-penny, fence and common.		Nails: wire, 8-penny, fence and common.		Pig iron: Bessemer.		Pig iron: foundry No. 1.		Pig iron: foundry No. 2.	
	Price per 100 pounds.	Relative price.	Price per 100 pounds.	Relative price.	Price per ton.	Relative price.	Price per ton.	Relative price.	Price per ton.	Relative price.
Average, 1890-1899..	$1.8275	100.0	$2.1618	100.0	$13.7783	100.0	$14.8042	100.0	$13.0533	100.0
Jan	2.1250	116.3	2.1500	99.5	19.0000	137.9	18.7000	126.3	18.0250	138.1
Feb	2.1250	116.3	2.1500	99.5	17.9000	129.9	18.7500	126.7	17.1500	131.4
Mar	2.0250	110.8	2.1500	99.5	17.8600	129.6	18.6200	125.8	16.7750	128.5
Apr	2.0250	110.8	2.1500	99.5	17.4900	126.9	18.1500	122.6	16.4000	125.6
May	2.0250	110.8	2.1500	99.5	16.9600	123.1	17.4400	117.8	16.6750	127.7
June	1.9500	106.7	2.1500	99.5	16.9000	122.7	17.1200	115.6	15.9000	121.8
July	1.8500	101.2	2.0500	94.8	16.8300	122.1	17.0000	114.8	15.9000	121.8
Aug	1.8750	102.6	2.0500	94.8	16.2600	118.0	17.0000	114.8	15.5250	118.9
Sept	1.8500	101.2	2.0500	94.8	15.9000	115.4	17.1200	115.6	15.5250	118.9
Oct	1.8500	101.2	2.0500	94.8	15.7500	114.3	17.2500	116.5	15.3250	117.4
Nov	1.8500	101.2	2.0500	94.8	16.5900	120.4	17.5000	118.2	15.4000	118.0
Dec	1.8500	101.2	2.0500	94.8	17.4000	126.3	17.7500	119.9	16.4000	125.6
Average, 1908	1.9500	106.7	2.1000	97.1	17.0700	123.9	17.7000	119.6	16.2500	124.5

Month.	Pig iron: Gray forge, southern, coke.		Planes: Bailey No. 5, jack plane.		Quicksilver.		Saws: crosscut, Disston No. 2.		Saws: hand, Disston No. 7.	
	Price per ton.	Relative price.	Price per plane.	Relative price.	Price per pound.	Relative price.	Price per saw.	Relative price.	Price per dozen.	Relative price.
Average, 1890-1899..	$11.0892	100.0	$1.3220	100.0	$0.5593	100.0	$1.6038	100.0	$12.780	100.0
Jan	15.0000	135.3	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3
Feb	14.5000	130.8	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3
Mar	14.5000	130.8	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3
Apr	14.0000	126.2	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3
May	13.7500	124.0	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3
June	14.0000	126.2	1.5300	115.7	.6000	107.3	1.6038	100.0	12.950	101.3
July	14.0000	126.2	1.5300	115.7	.5950	106.4	1.6038	100.0	12.950	101.3
Aug	14.2500	128.5	1.5300	115.7	.5900	105.5	1.6038	100.0	12.950	101.3
Sept	14.5000	130.8	1.5300	115.7	.6000	107.3	1.6038	100.0	12.950	101.3
Oct	14.5000	130.8	1.5300	115.7	.6200	110.9	1.6038	100.0	12.950	101.3
Nov	14.5000	130.8	1.5300	115.7	.6400	114.4	1.6038	100.0	12.950	101.3
Dec	15.0000	135.3	1.5300	115.7	.6250	111.7	1.6038	100.0	12.950	101.3
Average, 1908	14.3750	129.6	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Metals and implements.									
	Shovels: Ames No. 2.		Silver: bar, fine.		Spelter: western.		Steel billets.		Steel rails.	
	Price per dozen.	Relative price.	Price per ounce.	Relative price.	Price per pound.	Relative price.	Price per ton.	Relative price.	Price per ton.	Relative price.
Average, 1890-1899	$7.8658	100.0	$0.74899	100.0	$0.0452	100.0	$21.5262	100.0	$26.0654	100.0
Jan	7.8400	99.7	.56274	75.1	.0443	98.0	28.0000	130.1	28.0000	107.4
Feb	7.8400	99.7	.56630	75.6	.0473	104.6	28.0000	130.1	28.0000	107.4
Mar	7.8400	99.7	.55990	74.8	.0475	105.1	28.0060	130.1	28.0000	107.4
Apr	7.8400	99.7	.55129	73.6	.0473	104.6	28.0000	130.1	28.0000	107.4
May	7.8400	99.7	.53427	71.3	.0468	103.5	28.0000	130.1	28.0000	107.4
June	7.8400	99.7	.54278	72.5	.0458	101.3	25.7500	119.6	28.0000	107.4
July	7.8400	99.7	.53796	71.8	.0450	99.6	25.0000	116.1	28.0000	107.4
Aug	7.8400	99.7	.52302	69.8	.0483	106.9	25.0000	116.1	28.0000	107.4
Sept	7.8400	99.7	.52360	69.9	.0475	105.1	25.0000	116.1	28.0000	107.4
Oct	7.8400	99.7	.52050	69.5	.0485	107.3	25.0000	116.1	28.0000	107.4
Nov	7.8400	99.7	.50320	67.2	.0498	110.2	25.0000	116.1	28.0000	107.4
Dec	7.6200	96.9	.49390	66.0	.0519	114.8	25.0000	116.1	28.0000	107.4
Average, 1908	7.8217	99.4	.53496	71.4	.0475	105.1	26.3125	122.2	28.0000	107.4

Month.	Steel sheets: black, No. 27.		Tin: pig.		Tin plates: domestic, Bessemer, coke, 14 x 20 inch.		Trowels: M. C. O. brick, 10½-inch.		Vises: solid box, 50-pound.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per 100 pounds.	Relative price.	Price per trowel.	Relative price.	Price per vise.	Relative price.
Average, 1890-1899	[a]$0.0224	100.0	$0.1836	100.0	[b]$3.4148	100.0	$0.3400	100.0	$3.9009	100.0
Jan	.0240	107.1	.2675	145.7	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Feb	.0240	107.1	.2860	155.8	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Mar	.0240	107.1	.3038	165.5	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Apr	.0240	107.1	.3125	170.2	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
May	.0240	107.1	.3105	169.1	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
June	.0240	107.1	.2885	157.1	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
July	.0240	107.1	.2720	148.1	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Aug	.0240	107.1	.3073	167.4	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Sept	.0240	107.1	.2900	158.0	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Oct	.0240	107.1	.2950	160.7	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Nov	.0240	107.1	.3038	165.5	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Dec	.0240	107.1	.2940	160.1	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4
Average, 1908	.0240	107.1	.2942	160.2	3.8900	113.9	.3400	100.0	[c]4.3700	[d]147.4

[a] Average for the period, July, 1894, to December, 1899.

[b] Average for 1896-1899.

[c] Prices quoted by a different firm from that furnishing quotations in previous years.

[d] For method of computing relative price, see pages 230 and 231; average price for 1907, $4.37.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Metals and implements.				Lumber and building materials.					
	Wood screws: 1-inch, No. 10, flat head.		Zinc: sheet.		Brick: common domestic.		Carbonate of lead: American, in oil.		Cement: Portland, domestic.	
	Price per gross.	Relative price.	Price per 100 pounds.	Relative price.	Price per M.	Relative price.	Price per pound.	Relative price.	Price per barrel.	Relative price.
Average, 1890-1899	$0.1510	100.0	$5.3112	100.0	$5.5625	100.0	$0.0577	100.0	[a]$1.9963	100.0
Jan	.1000	66.2	6.4400	121.3	5.5000	98.9	.0637	110.4	1.5500	77.6
Feb	.1000	66.2	6.4400	121.3	5.5000	98.9	.0637	110.4	1.4500	72.6
Mar	.1000	66.2	6.4400	121.3	5.2500	94.4	.0637	110.4	1.4500	72.6
Apr	.1000	66.2	6.4400	121.3	5.3750	96.6	.0637	110.4	1.4500	72.6
May	.1000	66.2	6.4400	121.3	4.7500	85.4	.0637	110.4	1.4500	72.6
June	.1000	66.2	6.4400	121.3	4.6250	83.1	.0637	110.4	1.4500	72.6
July	.1000	66.2	6.4400	121.3	4.6250	83.1	.0662	114.7	1.4500	72.6
Aug	.1000	66.2	6.4400	121.3	4.5000	80.9	.0662	114.7	1.4500	72.6
Sept	.1000	66.2	6.4400	121.3	4.5000	80.9	.0662	114.7	1.4500	72.6
Oct	.1000	66.2	6.4400	121.3	4.7500	85.4	.0662	114.7	1.4500	72.6
Nov	.1000	66.2	6.4400	121.3	5.7500	103.4	.0662	114.7	1.4500	72.6
Dec	.1000	66.2	6.4400	121.3	6.1250	110.1	.0662	114.7	1.4500	72.6
Average, 1908	.1000	66.2	6.4400	121.3	5.1042	91.8	.0650	112.7	1.4600	73.1

Month.	Lumber and building materials.									
	Cement: Rosendale.		Doors: western white pine.		Hemlock.		Lime: common.		Linseed oil: raw.	
	Price per barrel.	Relative price.	Price per door.	Relative price.	Price per M feet.	Relative price.	Price per barrel.	Relative price.	Price per gallon.	Relative price.
Average, 1890-1899	$0.8871	100.0	[b]$1.0929	100.0	$11.9625	100.0	$0.8332	100.0	$0.4535	100.0
Jan	.9500	107.1	2.0100	[c]185.9	22.0000	183.9	1.0450	125.4	.4400	97.0
Feb	.9500	107.1	2.0100	[c]185.9	22.0000	183.9	1.0450	125.4	.4400	97.0
Mar	.9500	107.1	1.6850	[c]155.9	21.5000	179.7	1.0450	125.4	.4300	94.8
Apr	.9500	107.1	1.6850	[c]155.9	21.0000	175.5	1.0450	125.4	.4300	94.8
May	.9500	107.1	1.6850	[c]155.9	21.0000	175.5	1.0450	125.4	.4200	92.6
June	.9500	107.1	1.6850	[c]155.9	21.0000	175.5	1.0450	125.4	.4400	97.0
July	.9500	107.1	1.6850	[c]155.9	21.0000	175.5	1.0450	125.4	.4400	97.0
Aug	.9500	107.1	1.6850	[c]155.9	21.0000	175.5	1.0450	125.4	.4400	97.0
Sept	.9500	107.1	1.6850	[c]155.9	20.0000	167.2	1.0450	125.4	.4400	97.0
Oct	.9500	107.1	1.6850	[c]155.9	20.0000	167.2	1.0450	125.4	.4300	94.8
Nov	.9500	107.1	1.6850	[c]155.9	20.0000	167.2	1.0450	125.4	.4200	92.6
Dec	.9500	107.1	1.7400	[c]161.0	20.0000	167.2	1.0450	125.4	.4800	105.8
Average, 1908	.9500	107.1	1.7438	[c]161.3	20.8750	174.5	1.0450	125.4	.4375	96.5

[a] Average for 1895-1899.

[b] Doors: pine, unmolded, 2 feet 8 inches by 6 feet 8 inches, 1⅛ inches thick.

[c] For method of computing relative price, see pages 230 and 231; average price for 1907, $1.8108.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Lumber and building materials.									
	Maple: hard.		Oak: white, plain.		Oak: white, quartered.		Oxide of zinc.		Pine: white, boards, No. 2 barn (N. Y. market).	
	Price per M feet.	Relative price.	Price per M feet.	Relative price.	Price per M feet.	Relative price.	Price per pound.	Relative price.	Price per M feet.	Relative price.
Average, 1890-1899	$26.5042	100.0	$37.4292	100.0	$53.6771	100.0	$0.0400	100.0	[a]$17.1104	100.0
Jan	32.5000	122.6	54.0000	144.3	80.0000	149.0	.0513	128.3	37.7500	[b]197.4
Feb	32.5000	122.6	52.0000	138.9	80.0000	149.0	.0513	128.3	37.7500	[b]197.4
Mar	32.5000	122.6	52.0000	138.9	80.0000	149.0	.0513	128.3	37.7500	[b]197.4
Apr	32.5000	122.6	52.0000	138.9	80.0000	149.0	.0513	128.3	37.7500	[b]197.4
May	32.5000	122.6	52.0000	138.9	80.0000	149.0	.0513	128.3	37.7500	[b]197.4
June	31.0000	117.0	46.5000	124.2	80.0000	149.0	.0513	128.3	35.2500	[b]184.4
July	31.0000	117.0	46.5000	124.2	80.0000	149.0	.0513	128.3	35.2500	[b]184.4
Aug	31.0000	117.0	46.5000	124.2	80.0000	149.0	.0513	128.3	35.2500	[b]184.4
Sept	31.0000	117.0	47.5000	126.9	80.0000	149.0	.0513	128.3	35.2500	[b]184.4
Oct	31.0000	117.0	47.5000	126.9	80.0000	149.0	.0513	128.3	35.2500	[b]184.4
Nov	31.0000	117.0	47.5000	126.9	80.0000	149.0	.0513	128.3	35.2500	[b]184.4
Dec	31.0000	117.0	47.5000	126.9	82.0000	152.8	.0513	128.3	36.2500	[b]189.6
Average, 1908	31.6250	119.3	49.2917	131.7	80.1667	149.3	.0513	128.3	36.3750	[b]190.3

Month.	Pine: white, boards, uppers (N. Y. market).		Pine: yellow, flooring.		Pine: yellow, siding.		Plate glass: polished, glazing, area 3 to 5 sq. ft.		Plate glass: polished, glazing, area 5 to 10 sq. ft.	
	Price per M feet.	Relative price.	Price Per M feet.	Relative price.	Price per M feet.	Relative price.	Price per sq. foot.	Relative price.	Price per sq. foot.	Relative price.
Average, 1890-1899	[c]$46.5542	100.0	....	......	$18.4646	100.0	[d]$0.3630	100.0	[e]$0.5190	100.0
Jan	98.5000	[f]203.1	41.5000	(g)	30.5000	165.2	.2100	[h]70.5	.3200	[i]75.4
Feb	98.5000	[f]203.1	41.5000	(g)	30.5000	165.2	.2100	[h]70.5	.3200	[i]75.4
Mar	98.5000	[f]203.1	44.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
Apr	98.5000	[f]203.1	44.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
May	98.5000	[f]203.1	44.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
June	95.5000	[f]196.9	46.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
July	95.5000	[f]196.9	46.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
Aug	95.5000	[f]196.9	43.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
Sept	93.5000	[f]192.8	43.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
Oct	93.5000	[f]192.8	43.5000	(g)	30.5000	165.2	.1600	[h]53.7	.2600	[i]61.3
Nov	93.5000	[f]192.8	43.5000	(g)	30.5000	165.2	.1800	[h]60.4	.2800	[i]66.0
Dec	93.5000	[f]192.8	43.5000	(g)	30.5000	165.2	.2000	[h]67.1	.3000	[i]70.7
Average, 1908	96.0833	[f]198.1	43.9167	(g)	30.5000	165.2	.1733	[h]58.2	.2750	[i]64.8

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[a] Pine: white, boards, No. 2 barn, 1-inch, 10 inches wide, rough (Buffalo market).
[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $37.4167.
[c] Pine: white, boards, uppers, 1 inch, 8 inches and up wide, rough (Buffalo market).
[d] Plate glass: polished, unsilvered, area 3 to 5 square feet.
[e] Plate glass: polished, unsilvered, area 5 to 10 square feet.
[f] For method of computing relative price, see pages 230 and 231; average price for 1907, $97.0833.
[g] No relative price computed. For explanation see page 231.
[h] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.23.
[i] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.34.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Lumber and building materials.									
	Poplar.		Putty.		Rosin: common to good, strained.		Shingles: cypress.		Shingles: red cedar, random width, 16-inch.	
	Price per M feet.	Relative price.	Price per pound.	Relative price.	Price per barrel.	Relative price.	Price per M.	Relative price.	Price per M.	Relative price.
Average, 1890-1899	$31.3667	100.0	$0.0158	100.0	$1.4399	100.0	$2.8213	100.0	[a]$3.7434	100.0
Jan	59.5000	189.7	.0120	75.9	3.2000	222.2	3.8500	136.5	2.2500	[b] 159.8
Feb	56.5000	180.1	.0120	75.9	4.0000	277.8	3.8500	136.5	2.1500	[b] 152.7
Mar	58.5000	186.5	.0120	75.9	3.7500	260.4	3.8500	136.5	2.1000	[b] 149.2
Apr	60.0000	191.3	.0120	75.9	3.9000	270.9	3.6000	127.6	2.1000	[b] 149.2
May	60.0000	191.3	.0120	75.9	3.6000	250.0	3.6000	127.6	1.9000	[b] 135.0
June	57.0000	181.7	.0120	75.9	2.9500	204.9	3.6000	127.6	1.9500	[b] 138.5
July	57.0000	181.7	.0120	75.9	3.1500	218.8	3.3500	118.7	1.9500	[b] 138.5
Aug	57.0000	181.7	.0120	75.9	3.0000	208.3	3.3500	118.7	1.9500	[b] 138.5
Sept	58.5000	186.5	.0120	75.9	2.8000	194.5	3.3500	118.7	2.2000	[b] 156.3
Oct	58.5000	186.5	.0120	75.9	2.8800	200.0	3.3500	118.7	1.8500	[b] 131.4
Nov	58.5000	186.5	.0120	75.9	2.9000	201.4	3.3500	118.7	1.8500	[b] 131.4
Dec	58.5000	186.5	.0120	75.9	3.2500	225.7	3.3500	118.7	1.9000	[b] 135.0
Average, 1908	58.2917	185.8	.0120	75.9	3.2817	227.9	3.5375	125.4	2.0125	[b] 143.0

Month.	Spruce.		Tar.		Turpentine: spirits of.		Window glass: American, single, firsts, 6 x 8 to 10 x 15 inches.		Window glass: American, single, thirds, 6 x 8 to 10 x 15 inches.	
	Price per M feet.	Relative price.	Price per barrel.	Relative price.	Price per gallon.	Relative price.	Price per 50 sq. feet.	Relative price.	Price per 50 sq. feet.	Relative price.
Average, 1890-1899	$14.3489	100.0	$1.2048	100.0	$0.3343	100.0	$2.1514	100.0	$1.8190	100.0
Jan	21.0000	146.4	[c]	....	.4350	130.1	2.7200	126.4	2.1675	119.2
Feb	21.0000	146.4	[c]	....	.5550	166.0	2.2400	104.1	1.7850	98.1
Mar	21.0000	146.4	1.3000	107.9	.5350	160.0	2.5600	119.0	2.0400	112.1
Apr	21.0000	146.4	1.5000	124.5	.5650	169.0	2.5600	119.0	2.0400	112.1
May	21.0000	146.4	1.6000	132.8	.4750	142.1	1.9200	89.2	1.5300	84.1
June	19.5000	135.9	1.5000	124.5	.4350	130.1	1.9200	89.2	1.5300	84.1
July	19.5000	135.9	1.5000	124.5	.4200	125.6	1.9200	89.2	1.5300	84.1
Aug	19.5000	135.9	1.5000	124.5	.4100	122.6	2.4000	111.6	1.9125	105.1
Sept	20.5000	142.9	1.4000	116.2	.3900	116.7	2.5600	119.0	2.0400	112.1
Oct	20.5000	142.9	1.9000	157.7	.3900	116.7	2.5600	119.0	2.0400	112.1
Nov	21.5000	149.8	1.9000	157.7	.4000	119.7	2.4000	111.6	1.9125	105.1
Dec	23.5000	163.8	1.9000	157.7	.4300	128.6	2.5600	119.0	2.0400	112.1
Average, 1908	20.7917	144.9	1.6000	132.8	.4533	135.6	2.3600	109.7	1.8806	103.4

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[a] Shingles: white pine, 18-inch, XXXX.

[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $2.6958.

[c] No quotation for month.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	Drugs and chemicals.									
	Alcohol: grain.		Alcohol: wood, refined, 95 per cent.		Alum: lump.		Brimstone: crude, seconds.		Glycerin: refined.	
	Price per gallon.	Relative price.	Price per gallon.	Relative price.	Price per pound.	Relative price.	Price per ton.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899..	$2.2405	100.0	$0.9539	100.0	$0.0167	100.0	$20.6958	100.0	$0.1399	100.0
Jan..................	2.6300	117.4	.3900	40.9	.0175	104.8	19.5000	94.2	.1600	114.4
Feb..................	2.6300	117.4	.3900	40.9	.0175	104.8	22.0000	106.3	.1600	114.4
Mar..................	2.6300	117.4	.3900	40.9	.0175	104.8	22.0000	106.3	.1600	114.4
Apr..................	2.6300	117.4	.3900	40.9	.0175	104.8	22.0000	106.3	.1550	110.8
May..................	2.6300	117.4	.3900	40.9	.0175	104.8	22.0000	106.3	.1425	101.9
June.................	2.6300	117.4	.4100	43.0	.0175	104.8	22.0000	106.3	.1375	98.3
July.................	2.6300	117.4	.4600	48.2	.0175	104.8	22.0000	106.3	.1350	96.5
Aug..................	2.6300	117.4	.4600	48.2	.0175	104.8	22.0000	106.3	.1350	96.5
Sept.................	2.6500	118.3	.4600	48.2	.0175	104.8	22.0000	106.3	.1450	103.6
Oct..................	2.6500	118.3	.4500	47.2	.0175	104.8	22.0000	106.3	.1450	103.6
Nov..................	2.6500	118.3	.4700	49.3	.0175	104.8	22.0000	106.3	.1500	107.2
Dec..................	2.6500	118.3	.4700	49.3	.0175	104.8	22.0000	106.3	.1650	117.9
Average, 1908	2.6367	117.7	.4275	44.8	.0175	104.8	21.7917	105.3	.1492	106.6

Month.	Drugs and chemicals.								House furnishing goods.	
	Muriatic acid: 20°.		Opium: natural, in cases.		Quinine: American.		Sulphuric acid: 66°.		Earthenware: plates, cream-colored.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per ounce.	Relative price.	Price per pound.	Relative price.	Price per dozen.	Relative price.
Average, 1890-1899..	$0.0104	100.0	$2.3602	100.0	$0.2460	100.0	$0.0089	100.0	$0.4136	100.0
Jan..................	.0135	129.8	5.0000	211.8	.1600	65.0	.0100	112.4	.4300	104.0
Feb..................	.0135	129.8	4.5500	192.8	.1600	65.0	.0110	123.6	.4300	104.0
Mar..................	.0135	129.8	4.5000	190.7	.1600	65.0	.0110	123.6	.4300	104.0
Apr..................	.0135	129.8	4.3750	185.4	.1600	65.0	.0110	123.6	.4300	104.0
May..................	.0135	129.8	4.5500	192.8	.1600	65.0	.0090	101.1	.4300	104.0
June.................	.0135	129.8	4.5000	190.7	.1600	65.0	.0100	112.4	.4300	104.0
July.................	.0135	129.8	5.7500	243.6	.1600	65.0	.0100	112.4	.4300	104.0
Aug..................	.0135	129.8	5.5000	233.0	.1600	65.0	.0100	112.4	.4300	104.0
Sept.................	.0135	129.8	5.0000	211.8	.1500	61.0	.0100	112.4	.4300	104.0
Oct..................	.0135	129.8	4.5000	190.7	.1500	61.0	.0100	112.4	.4300	104.0
Nov..................	.0135	129.8	4.3000	182.2	.1500	61.0	.0100	112.4	.4300	104.0
Dec..................	.0135	129.8	4.0500	171.6	.1500	61.0	.0100	112.4	.4300	104.0
Average, 1908........	.0135	129.8	4.7146	199.8	.1567	63.7	.0102	114.6	.4300	104.0

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	House furnishing goods.									
	Earthenware: plates, white granite.		Earthenware: teacups and saucers, white granite.		Furniture: bedroom sets, hard wood.		Furniture: chairs, bedroom, maple.		Furniture: chairs, kitchen.	
	Price per dozen.	Relative price.	Price per gross (6 dozen cups and 6 dozen saucers).	Relative price.	Price per set.	Relative price.	Price per dozen.	Relative price.	Price per dozen.	Relative price.
Average, 1890-1899	$0.4479	100.0	$3.4292	100.0	[a]$10.555	100.0	$6.195	100.0	$3.8255	100.0
Jan	.4586	102.4	3.3869	98.8	11.250	[b]137.4	10.000	161.4	6.0000	156.8
Feb	.4586	102.4	3.3869	98.8	11.250	[b]137.4	10.000	161.4	6.0000	156.8
Mar	.4586	102.4	3.3869	98.8	11.250	[b]137.4	10.000	161.4	6.0000	156.8
Apr	.4586	102.4	3.3869	98.8	11.250	[b]137.4	10.000	161.4	6.0000	156.8
May	.4586	102.4	3.3869	98.8	11.250	[b]137.4	10.000	161.4	6.0000	156.8
June	.4586	102.4	3.3869	98.8	11.250	[b]137.4	9.000	145.3	6.0000	156.8
July	.4586	102.4	3.3869	98.8	10.750	[b]131.3	9.000	145.3	6.0000	156.8
Aug	.4586	102.4	3.3869	98.8	10.750	[b]131.3	9.000	145.3	6.0000	156.8
Sept	.4586	102.4	3.3869	98.8	10.750	[b]131.3	9.000	145.3	6.0000	156.8
Oct	.4586	102.4	3.3869	98.8	10.750	[b]131.3	9.000	145.3	6.0000	156.8
Nov	.4586	102.4	3.3869	98.8	10.750	[b]131.3	9.000	145.3	6.0000	156.8
Dec	.4586	102.4	3.3869	98.8	10.750	[b]131.3	9.000	145.3	6.0000	156.8
Average, 1908	.4586	102.4	3.3869	98.8	11.000	[b]134.3	9.417	152.0	6.0000	156.8

Month.	Furniture: tables, kitchen.		Glassware: nappies, 4-inch.		Glassware: pitchers, ½-gallon, common.		Glassware: tumblers, ⅓-pint, common.		Table cutlery: carvers, stag handles.	
	Price per dozen.	Relative price.	Price per dozen.	Relative price.	Price per dozen.	Relative price.	Price per dozen.	Relative price.	Price per pair.	Relative price.
Average, 1890-1899	$14.435	100.0	$0.112	100.0	$1.175	100.0	$0.1775	100.0	$0.80	100.0
Jan	18.000	124.7	.130	116.1	1.050	89.4	.1500	84.5	.75	93.8
Feb	18.000	124.7	.130	116.1	1.050	89.4	.1500	84.5	.75	93.8
Mar	18.000	124.7	.130	116.1	1.050	89.4	.1500	84.5	.75	93.8
Apr	18.000	124.7	.130	116.1	1.050	89.4	.1500	84.5	.75	93.8
May	18.000	124.7	.130	116.1	1.050	89.4	.1500	84.5	.75	93.8
June	18.000	124.7	.130	116.1	1.050	89.4	.1200	67.6	.75	93.8
July	18.000	124.7	.130	116.1	1.050	89.4	.1200	67.6	.75	93.8
Aug	18.000	124.7	.110	98.2	.840	71.5	.1200	67.6	.75	93.8
Sept	18.000	124.7	.110	98.2	.840	71.5	.1200	67.6	.75	93.8
Oct	18.000	124.7	.110	98.2	.840	71.5	.1200	67.6	.75	93.8
Nov	18.000	124.7	.110	98.2	.840	71.5	.1200	67.6	.75	93.8
Dec	18.000	124.7	.110	98.2	.840	71.5	.1200	67.6	.75	93.8
Average, 1908	18.000	124.7	.122	108.9	.963	82.0	.1325	74.6	.75	93.8

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[a] Furniture: bedroom sets, ash.

[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $11.25.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

[Average for 1908 computed from quotations in Table I.]

Month.	House furnishing goods.						Miscellaneous.	
	Table cutlery: knives and forks, cocobolo handles.		Wooden ware: pails, oak grained.		Wooden ware: tubs, oak-grained.		Cotton-seed meal.	
	Price per gross.	Relative price.	Price per dozen.	Relative price.	Price per nest of 3.	Relative price.	Price per ton of 2,000 lbs.	Relative price.
Average, 1890-1899...	$6.0600	100.0	$1.2988	100.0	$1.3471	100.0	$21.9625	100.0
Jan................	5.5000	90.8	2.1000	161.7	1.6500	122.5	28.6000	130.2
Feb................	5.5000	90.8	2.1000	161.7	1.6500	122.5	28.6000	130.2
Mar................	5.5000	90.8	2.1000	161.7	1.6500	122.5	28.1000	127.9
Apr................	5.5000	90.8	2.1000	161.7	1.6500	122.5	29.1000	132.5
May................	5.5000	90.8	2.1000	161.7	1.6500	122.5	29.6000	134.8
June...............	5.5000	90.8	2.1000	161.7	1.6500	122.5	29.6000	134.8
July...............	5.5000	90.8	2.1000	161.7	1.6500	122.5	29.6000	134.8
Aug................	5.5000	90.8	2.1000	161.7	1.6500	122.5	29.6000	134.8
Sept...............	5.5000	90.8	2.1000	161.7	1.6500	122.5	30.6000	139.3
Oct................	5.5000	90.8	2.1000	161.7	1.6500	122.5	29.6000	134.8
Nov................	5.0000	82.5	2.1000	161.7	1.6500	122.5	30.1000	137.1
Dec................	5.0000	82.5	2.1000	161.7	1.6500	122.5	29.6000	134.8
Average, 1908.......	5.4167	89.4	2.1000	161.7	1.6500	122.5	29.3917	133.8

Month.	Miscellaneous.							
	Cotton-seed oil: summer yellow, prime.		Jute: raw, M-double triangle, shipment.		Malt: western made.		Paper: news.	
	Price per gallon.	Relative price.	Price per pound.	Relative price.	Price per bushel.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899...	$0.3044	100.0	[a] $0.0359	100.0	$0.7029	100.0	$0.0299	100.0
Jan................	.3750	123.2	.0375	[b] 142.3	1.2100	172.1	.0265	88.6
Feb................	.4050	133.0	.0325	[b] 123.3	1.1750	167.2	.0265	88.6
Mar................	.3700	121.6	.0325	[b] 123.3	1.1750	167.2	.0263	88.0
Apr................	.4200	138.0	.0350	[b] 132.8	1.0400	148.0	.0265	88.6
May................	.4350	142.9	.0388	[b] 147.2	1.0000	142.3	.0265	88.6
June...............	.4775	156.9	.0375	[b] 142.3	.8250	117.4	.0265	88.6
July...............	.4700	154.4	.0388	[b] 147.2	.8500	120.9	.0265	88.6
Aug................	.4275	140.4	.0425	[b] 161.3	.8500	120.9	.0233	77.9
Sept...............	.3725	122.4	.0413	[b] 156.7	.8100	115.2	.0233	77.9
Oct................	.4000	131.4	.0400	[b] 151.8	.7600	108.1	.0233	77.9
Nov................	.3725	122.4	.0350	[b] 132.8	.7600	108.1	.0210	70.2
Dec................	.3825	125.7	.0325	[b] 123.3	.7350	104.6	.0208	69.6
Average, 1908.......	.4090	134.4	.0370	[b] 140.4	.9325	132.7	.0248	82.9

[a] Jute: raw, spot quotations.

[b] For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0486.

TABLE II.—MONTHLY ACTUAL AND RELATIVE PRICES OF COMMODITIES IN 1908 AND BASE PRICES (AVERAGE FOR 1890-1899)—Concluded.

[Average for 1908 computed from quotations in Table I.]

Month.	Miscellaneous.							
	Paper: wrapping, manila.		Proof spirits.		Rope: manila, base sizes.		Rubber: Para Island.	
	Price per pound.	Relative price.	Price per gallon.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899	$0.0553	100.0	$1.1499	100.0	$0.0934	100.0	$0.8007	100.0
Jan	.0525	94.9	1.3500	117.4	.1150	123.1	.7650	95.5
Feb	.0525	94.9	1.3500	117.4	.1150	123.1	.7125	89.0
Mar	.0525	94.9	1.3500	117.4	.1125	120.4	.6950	86.8
Apr	.0513	92.8	1.3500	117.4	.1063	113.8	.7525	94.0
May	.0513	92.8	1.3500	117.4	.1063	113.8	.8050	100.5
June	.0513	92.8	1.3500	117.4	.1013	108.5	.8750	109.3
July	.0513	92.8	1.3500	117.4	.1000	107.1	.8850	110.5
Aug	.0475	85.9	1.3500	117.4	.0975	104.4	.8550	106.8
Sept	.0475	85.9	1.3660	118.8	.0950	101.7	.9050	113.0
Oct	.0475	85.9	1.3700	119.1	.0900	96.4	.9650	120.5
Nov	.0475	85.9	1.3700	119.1	.0900	96.4	1.0500	131.1
Dec	.0475	85.9	1.3700	119.1	.0888	95.1	1.1850	148.0
Average, 1908	.0500	90.4	1.3565	118.0	.1015	108.7	.8708	108.8

Month.	Soap: castile, mottled, pure.		Starch: laundry.		Tobacco: plug.		Tobacco: smoking, granulated, seal of N. C.	
	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.	Price per pound.	Relative price.
Average, 1890-1899	$0.0569	100.0	$0.0348	100.0	$0.3962	100.0	$0.5090	100.0
Jan	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
Feb	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
Mar	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
Apr	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
May	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
June	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
July	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
Aug	.0700	123.0	.0425	122.1	.4700	118.6	.6000	117.9
Sept	.0700	123.0	.0450	129.3	.4700	118.6	.6000	117.9
Oct	.0700	123.0	.0450	129.3	.4700	118.6	.6000	117.9
Nov	.0700	123.0	.0450	129.3	.4700	118.6	.6000	117.9
Dec	.0700	123.0	.0450	129.3	.4700	118.6	.6000	117.9
Average, 1908	.0700	123.0	.0433	124.4	.4700	118.6	.6000	117.9

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908.

[For explanation and discussion of this table, see pages 231 to 239. Average price for 1890–1899=100.0. For a more detailed description of the articles, see Table I. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Farm products.										
	Cotton: upland, middling.	Flaxseed: No. 1.	Grain.						Hay: timothy No. 1.	Hides: green, salted, packers, heavy native steers.	Hops: New York State, choice.
			Barley: by sample.	Corn: cash.	Oats: cash.	Rye: No. 2 cash.	Wheat: regular grades, cash.	Average.			
Jan.....	150.4	104.2	219.7	156.3	187.9	158.9	131.7	170.0	125.2	119.1	87.5
Feb....	149.1	102.6	197.1	152.0	188.2	155.1	123.8	162.4	130.0	110.7	87.5
Mar....	142.0	102.9	196.6	167.1	197.8	151.9	126.8	167.4	133.7	100.7	76.2
Apr....	129.6	101.5	182.8	175.4	195.1	148.2	124.6	164.9	133.0	112.1	64.9
May....	141.2	104.7	159.1	196.2	203.3	154.0	135.8	170.6	134.2	125.4	64.9
June....	149.3	108.7	132.6	184.4	190.0	147.4	127.6	157.7	107.4	141.4	64.9
July....	144.9	106.2	151.3	196.2	206.3	143.7	120.6	163.9	106.1	160.1	50.8
Aug....	133.8	110.3	145.0	206.4	179.1	147.1	130.3	163.2	107.9	166.8	42.3
Sept....	120.1	110.5	142.0	209.3	182.5	143.9	132.7	163.9	104.0	168.1	36.7
Oct.....	118.7	106.9	133.2	193.4	214.8	141.9	135.2	164.9	109.1	167.0	76.2
Nov....	121.3	110.9	139.0	167.7	220.7	141.6	138.8	162.3	116.8	168.7	76.2
Dec.....	119.2	126.2	139.2	155.4	184.3	143.3	140.8	154.1	115.0	170.8	76.2
1908....	134.8	108.0	161.8	179.9	189.5	148.0	131.8	163.0	118.3	142.6	67.1

Month.	Live stock.										Average, farm products.(b)
	Cattle.			Hogs.			Sheep.			Average. (a)	
	Steers: choice to extra.	Steers: good to choice.	Average.	Heavy.	Light.	Average.	Wethers, good to fancy.	Wethers, plain to choice.	Average.		
Jan.....	111.0	111.3	111.2	101.1	98.3	99.7	117.1	117.2	117.2	111.7	129.8
Feb.....	108.7	111.9	110.3	98.7	96.8	97.8	120.8	120.8	120.8	113.1	128.8
Mar....	121.0	126.6	123.9	113.4	111.0	112.3	140.1	138.8	139.5	124.8	134.2
Apr....	128.6	130.9	129.8	131.9	129.5	130.7	137.3	134.4	135.9	129.8	135.0
May....	130.5	132.3	131.4	125.0	123.3	124.2	120.0	119.6	119.9	124.7	134.9
June....	143.5	140.5	142.0	133.2	130.3	131.8	107.4	103.6	105.5	125.5	132.8
July....	137.1	131.5	134.3	150.9	146.8	148.8	99.8	94.1	96.9	125.2	134.0
Aug....	130.3	127.0	128.7	152.8	149.1	150.9	99.0	95.3	97.2	124.2	133.8
Sept....	127.1	124.1	125.6	161.3	157.8	159.6	94.8	92.1	93.5	124.5	132.7
Oct.....	125.0	120.1	122.6	139.2	132.6	136.0	102.2	99.0	100.6	119.4	133.9
Nov....	132.7	126.7	129.7	135.6	128.3	132.0	101.1	97.2	99.2	120.0	133.5
Dec.....	138.2	133.6	135.9	131.6	123.7	127.7	107.9	104.4	106.2	122.4	135.2
1908....	128.1	126.7	127.4	131.4	127.5	129.5	112.3	109.6	111.0	122.3	133.1

[a] Including horses and mules, see explanation, page 231.

[b] Including horses, mules, poultry, and tobacco, see explanation, page 231.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.00. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Food, etc.								
	Beans: medium choice.	Bread.							
		Crackers.			Loaf.				Average.
		Oyster.	Soda.	Average.	Washington market.	Home-made (N. Y. market).	Vienna (N. Y. market).	Average.	
Jan.....	137.0	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Feb.....	135.5	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Mar.....	139.2	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Apr.....	134.7	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
May.....	131.7	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
June.....	145.2	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
July.....	142.2	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Aug.....	142.2	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Sept.....	142.2	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Oct.....	140.7	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Nov.....	138.5	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
Dec.....	137.7	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6
1908.....	138.9	133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6

Month.	Butter.				Cheese: N. Y., full cream.	Coffee: Rio No. 7.	Eggs: new-laid, fancy, near-by.	Fish.				
	Creamery, Elgin (Elgin market).	Creamery, extra (N. Y. market).	Dairy, New York State.	Average.				Cod, dry, bank, large.	Herring, large, Nova Scotia split.	Mackerel, salt, large No. 3s.	Salmon, canned.	Average.
Jan....	140.6	138.5	140.8	140.0	159.6	46.2	154.8	132.1	163.8	99.1	135.8	133.6
Feb....	150.4	146.1	[a] 140.8	145.9	159.6	48.1	141.4	132.1	163.8	95.5	135.8	132.4
Mar....	135.9	127.1	[a] 140.8	134.6	159.6	48.1	108.3	132.1	163.8	88.5	130.7	128.7
Apr....	131.9	126.6	133.0	130.5	150.1	46.2	92.4	134.3	163.8	88.5	130.7	129.2
May....	109.4	103.8	112.4	108.6	146.9	46.2	95.8	129.8	163.8	81.4	130.7	125.8
June....	106.0	102.8	112.2	107.0	128.2	49.0	104.7	129.8	163.8	77.8	130.7	124.7
July....	101.4	99.4	106.9	102.5	113.4	48.6	121.0	129.8	163.8	74.3	130.7	123.5
Aug....	103.2	112.8	105.3	107.2	117.5	47.6	128.6	129.8	158.2	74.3	130.7	122.4
Sept....	110.0	106.8	109.9	109.0	122.6	46.2	144.7	129.8	158.2	72.5	130.7	121.8
Oct....	126.7	119.9	126.0	124.2	126.6	48.1	175.1	129.8	158.2	70.8	130.7	121.3
Nov....	135.5	129.3	136.8	133.9	132.7	49.5	211.4	129.8	146.9	70.8	123.9	117.1
Dec....	141.7	139.8	143.8	141.8	141.8	50.0	223.1	129.8	152.5	70.8	123.9	118.2
1908....	124.1	120.9	121.0	122.1	138.2	47.8	142.0	130.7	160.1	80.4	130.4	124.9

Month.	Flour.						Fruit.	
	Buckwheat.	Rye.	Wheat.			Average.	Apples, evaporated, choice.	Currants, in barrels.
			Spring patents.	Winter straights.	Average.			
Jan.....	157.0	154.5	130.3	118.3	124.3	140.1	118.1	176.8
Feb.....	154.4	152.2	124.9	112.8	118.9	135.9	112.2	170.1
Mar.....	180.2	152.2	126.0	113.8	119.9	142.4	107.8	163.5
Apr.....	[a] 180.2	146.2	120.6	109.4	115.0	138.4	106.3	158.4
May.....	[a] 180.2	144.7	125.1	112.5	118.8	140.1	98.9	156.8
June.....	[a] 180.2	147.0	122.2	108.7	115.4	138.8	106.3	156.8
July.....	[a] 180.2	141.7	125.4	104.5	114.7	137.2	100.4	156.8
Aug.....	[a] 180.2	130.4	130.3	104.0	116.8	135.9	100.4	156.8
Sept.....	[a] 180.2	135.7	128.8	107.8	118.1	137.8	97.4	171.7
Oct.....	164.7	131.9	125.5	111.8	118.6	133.7	94.5	165.1
Nov.....	145.4	125.1	126.1	116.2	121.2	129.2	90.1	158.4
Dec.....	135.1	152.2	127.8	118.6	123.2	133.9	90.1	158.4
1908.....	156.1	142.8	126.1	111.6	118.8	134.2	101.9	162.4

[a] Nominal price, see explanation on page 232.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Food, etc.							
	Fruit.			Glucose.(a)	Lard: prime, contract.	Meal: corn.		
	Prunes, California, in boxes.	Raisins, California, London layer.	Average.			Fine white.	Fine yellow.	Average.
Jan	88.9	120.0	131.0	174.9	124.5	140.7	145.0	142.9
Feb	87.2	120.0	127.5	177.7	115.4	140.7	145.0	142.9
Mar	79.2	120.0	122.0	177.7	123.2	143.0	147.5	145.3
Apr	74.3	120.0	118.9	177.7	129.4	152.6	157.3	155.0
May	74.3	120.0	116.4	174.9	131.7	143.0	147.5	145.3
June	74.3	120.0	118.6	174.9	137.0	157.4	162.3	159.8
July	69.5	120.0	115.0	174.9	146.5	155.0	159.8	157.4
Aug	69.5	120.0	115.0	189.0	147.6	159.7	164.7	162.3
Sept	79.2	123.3	121.2	203.1	159.0	169.3	174.6	171.9
Oct	79.2	123.3	119.2	203.1	152.9	162.1	167.2	164.7
Nov	79.2	b 123.3	116.8	203.1	148.8	164.5	169.6	167.1
Dec	72.7	b 123.3	114.3	203.1	146.9	159.7	164.7	162.3
1908	77.3	120.6	119.5	186.2	138.8	154.0	158.8	156.4

Month.	Meat.										
	Beef.				Pork.					Mutton, dressed.	Average. (c)
	Fresh, native sides and carcass. (c)	Salt, extra mess.	Salt, hams, western.	Average. (c)	Bacon, short clear sides.	Bacon, short rib sides.	Hams, smoked.	Salt, mess, old to new.	Average.		
Jan	117.0	133.3	141.0	130.5	116.7	115.9	101.3	127.9	115.2	117.8	123.8
Feb	117.0	130.2	141.0	129.7	106.5	106.3	97.2	121.4	107.7	122.7	120.8
Mar	119.6	140.3	145.9	134.9	110.7	110.4	99.6	125.7	111.4	143.9	127.5
Apr	135.4	162.2	149.2	150.0	116.7	116.8	108.5	128.9	117.6	150.0	137.9
May	139.1	171.5	149.2	154.5	117.6	118.1	109.3	128.9	118.4	136.7	138.6
June	142.3	177.0	153.1	158.5	125.8	125.6	118.7	134.3	126.1	123.3	142.0
July	139.4	182.8	160.3	160.0	142.2	142.1	131.8	151.0	141.8	107.8	147.3
Aug	128.3	184.0	160.3	154.2	147.3	147.3	131.2	149.4	143.8	105.3	145.1
Sept	126.2	184.0	165.8	154.3	162.1	160.2	129.5	148.5	150.1	87.5	145.5
Oct	128.1	176.5	165.8	153.4	160.0	159.0	126.4	145.6	147.8	92.8	144.8
Nov	129.0	165.3	155.5	148.7	154.2	152.7	114.0	140.8	140.3	89.5	139.1
Dec	133.7	165.3	150.3	150.2	140.3	137.0	105.7	142.7	131.1	96.8	136.8
1908	129.5	164.5	153.2	148.2	133.5	132.6	114.3	137.3	129.3	114.5	137.4

Month.	Milk: fresh.	Molasses: New Orleans, open kettle.	Rice: domestic, choice.	Salt: American.	Soda: bicarbonate of, American.	Spices: pepper, Singapore.	Starch: pure corn.	Sugar.			
								89° fair refining.	96° centrifugal.	Granulated.	Average.
Jan	156.9	120.6	110.3	109.6	62.2	111.9	109.5	98.6	99.6	99.6	99.3
Feb	147.1	120.6	110.3	107.9	62.2	105.2	109.5	95.5	96.8	98.4	96.8
Mar	137.3	111.1	110.3	105.1	55.0	105.2	109.5	106.1	106.1	105.2	105.8
Apr	122.7	111.1	110.3	105.1	55.0	101.9	109.5	114.7	113.7	112.3	113.6
May	102.7	111.1	110.3	100.8	55.0	95.2	109.5	112.1	111.3	111.3	111.6
June	88.2	111.1	110.3	100.8	55.0	95.2	109.5	112.7	111.9	110.5	111.7
July	98.0	111.1	112.5	110.2	47.8	89.3	100.4	112.7	111.9	110.6	111.7
Aug	117.6	111.1	115.9	117.1	47.8	91.9	100.4	103.8	104.6	105.2	104.5
Sept	122.7	111.1	115.9	120.7	47.8	95.2	100.4	101.5	102.0	104.7	102.7
Oct	147.1	111.1	110.3	120.7	47.8	88.5	100.4	102.6	103.1	102.6	102.8
Nov	150.2	111.1	109.3	120.7	47.8	81.8	100.4	101.3	101.9	97.6	100.3
Dec	156.9	111.1	109.3	120.7	47.8	84.2	100.4	96.5	97.6	96.0	96.7
1908	129.0	112.7	111.2	111.5	52.6	95.5	104.9	104.9	105.0	104.5	104.8

[a] Average for 1893-1899=100.0.
[b] Nominal price, see explanation on page 232.
[c] Including carcass beef, native steers (Chicago market). See explanation, page 231.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Food, etc.							Cloths and clothing.			
			Vegetables, fresh.						Blankets.		
	Tallow.	Tea: Formosa, fine.	Onions.	Potatoes, white, choice to fancy.	Average. (a)	Vinegar: cider, Monarch.	Average, food, etc. (b)	Bags: 2 bu., Amoskeag.	11-4, 5 pounds to the pair, all wool.	10-4, 2 pounds to the pair, 54×74, all cotton.	Average.
Jan.....	126.4	81.0	103.0	119.4	102.7	121.8	120.5	139.4	113.1	139.1	125.9
Feb....	120.7	81.0	125.0	135.5	115.7	121.8	119.8	150.1	113.1	139.1	125.9
Mar....	119.1	81.0	161.8	136.2	122.5	121.8	120.2	132.2	113.1	139.1	125.9
Apr....	124.4	81.0	[c]161.8	135.0	123.1	121.8	121.3	132.2	113.1	135.0	124.1
May....	124.4	72.2	[c]161.8	132.2	114.3	121.8	118.2	132.2	113.1	135.0	124.1
June....	123.7	72.2	[c]161.8	193.3	135.1	121.8	120.3	132.2	113.1	135.0	124.1
July....	126.0	72.2	[c]161.8	184.9	132.2	128.6	120.2	132.2	113.1	135.0	124.1
Aug....	124.6	72.2	[c]161.8	152.5	121.2	128.6	120.0	132.2	113.1	135.0	124.1
Sept....	129.4	72.2	80.9	138.5	122.9	128.6	121.9	132.2	113.1	135.0	124.1
Oct.....	137.9	72.2	80.9	122.8	123.0	128.6	122.6	132.2	113.1	135.0	124.1
Nov....	133.6	72.2	66.2	129.2	124.9	128.6	121.9	132.2	113.1	135.0	124.1
Dec....	130.6	72.2	110.3	134.7	162.4	121.8	124.4	132.2	113.1	135.0	124.1
1908....	126.7	75.1	104.0	142.6	124.8	124.6	120.6	134.3	113.1	136.1	124.6

Month.	Cloths and clothing.										
	Boots and shoes.							Carpets.			
	Men's brogans, split.	Men's vici calf shoes, Blucher bal., vici calf top, single sole.	Men's vici kid shoes, Goodyear welt.	Women's solid grain shoes.	Average.	Broadcloths: first quality, black, 54-inch, XXX wool.	Calico: American standard prints, 64x64.	Brussels, 5-frame, Bigelow.	Ingrain, 2-ply, Lowell.	Wilton, 5-frame, Bigelow.	Average.
Jan.....	116.2	109.0	108.7	119.3	121.9	116.6	133.7	124.7	121.2	123.7	123.2
Feb....	111.2	109.0	108.7	119.3	120.6	116.6	114.6	124.7	121.2	123.7	123.2
Mar....	108.7	109.0	108.7	116.2	119.3	116.6	114.6	124.7	121.2	123.7	123.2
Apr....	108.7	109.0	108.7	116.2	119.3	116.6	114.6	124.7	121.2	123.7	123.2
May....	111.2	109.0	108.7	113.1	119.1	116.6	114.6	117.5	116.2	118.5	117.4
June....	113.7	109.0	108.7	113.1	119.7	116.6	90.6	117.5	116.2	118.5	117.4
July....	113.7	109.0	108.7	116.2	120.5	116.6	90.6	117.5	116.2	118.5	117.4
Aug....	116.2	109.0	108.7	116.2	121.1	114.3	95.5	117.5	116.2	118.5	117.4
Sept....	116.2	109.0	108.7	119.3	121.9	114.3	95.5	117.5	116.2	118.5	117.4
Oct.....	118.8	109.0	108.7	122.3	123.3	114.3	95.5	117.5	111.1	118.5	115.7
Nov....	121.3	109.0	108.7	125.4	124.7	114.3	95.5	117.5	111.1	118.5	115.7
Dec.....	121.3	109.0	108.7	125.4	124.7	114.3	95.5	117.5	111.1	118.5	115.7
1908....	114.8	109.0	108.7	118.5	121.3	115.6	104.3	119.9	116.6	120.2	118.9

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[a] Including cabbage; see explanation, page 231.

[b] Including canned corn, peas, and tomatoes, fresh carcass beef (Chicago market), dressed poultry, and cabbage; see explanation, page 231.

[c] Nominal price; see explanation on page 232.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Cloths and clothing.										
	Cotton flannels.			Cotton thread: 6-cord, 200-yard spools, J. & P. Coats.	Cotton yarns.			Denims: Amoskeag.	Drillings.		
	2¾ yards to the pound.	3¼ yards to the pound.	Average.		Carded, white, mule-spun, northern, cones, 10/1.	Carded, white, mule-spun, northern, cones, 22/1.	Average.		Brown, Pepperell.	30-inch, Stark A.	Average.
Jan.....	127.5	130.4	128.9	145.4	124.4	119.3	121.9	119.7	126.7	148.2	137.3
Feb....	127.5	130.4	128.9	145.4	121.3	110.5	115.9	119.7	126.7	150.9	139.0
Mar....	123.9	126.1	125.0	129.6	118.2	116.8	117.6	119.7	126.7	143.2	134.9
Apr....	123.9	126.1	125.0	129.6	113.5	97.8	105.6	114.9	122.4	132.1	127.2
May....	120.4	121.7	121.0	129.6	110.4	101.6	106.0	114.9	122.4	139.3	130.8
June....	120.4	121.7	121.0	129.6	105.7	100.3	103.1	105.4	122.4	133.0	127.7
July....	116.9	117.4	117.1	129.6	105.7	101.6	103.7	105.4	122.4	137.6	129.9
Aug....	116.9	117.4	117.1	129.6	105.7	109.2	107.6	105.4	122.4	134.0	128.2
Sept....	109.8	117.4	113.6	129.6	104.2	106.7	105.6	105.4	122.4	133.4	127.9
Oct.....	109.8	117.4	113.6	129.6	104.2	107.9	106.2	105.4	122.4	135.3	128.8
Nov....	106.2	113.0	109.6	126.4	107.3	106.7	107.1	105.4	122.4	134.0	128.2
Dec.....	106.2	113.0	109.6	126.4	105.7	104.1	105.0	112.5	122.4	132.6	127.5
1908....	117.4	121.0	119.2	131.7	110.5	106.9	108.8	111.1	123.4	137.8	130.6

Month.	Flannels: white, 4-4, Ballard Vale No. 3.	Ginghams.			Horse blankets: 6 pounds each, all wool.	Hosiery.			
		Amoskeag.	Lancaster.	Average.		Men's cotton half hose, seamless, fast black, 20 to 22 oz.	Women's cotton hose, combed peeler yarn, high spliced heel. (a)	Women's cotton hose, seamless, fast black, 26 oz.	Average.
Jan.....	124.4	112.6	117.8	115.3	126.5	88.9	95.9	84.2	89.5
Feb....	124.4	107.9	113.4	110.8	126.5	88.9	95.9	84.2	89.5
Mar....	124.4	112.6	113.4	113.1	126.5	88.9	95.9	84.2	89.5
Apr....	124.4	112.6	113.4	113.1	126.5	88.9	95.9	84.2	89.5
May....	124.4	112.6	113.4	113.1	126.5	88.9	95.9	84.2	89.5
June....	120.9	93.8	87.3	90.6	126.5	88.9	95.9	84.2	89.5
July....	120.9	93.8	87.3	90.6	126.5	88.9	95.9	84.2	89.5
Aug....	120.9	93.8	87.3	90.6	126.5	88.9	95.9	84.2	89.5
Sept....	120.9	93.8	87.3	90.6	126.5	88.9	95.9	84.2	89.5
Oct.....	120.9	93.8	87.3	90.6	126.5	88.9	95.9	84.2	89.5
Nov....	120.9	103.2	96.0	99.6	126.5	88.9	95.9	84.2	89.5
Dec.....	120.9	103.2	96.0	99.6	126.5	88.9	95.9	84.2	89.5
1908....	122.4	102.8	100.0	101.5	126.5	88.9	95.9	84.2	89.5

Month.	Leather.					Linen shoe thread, 10s, Barbour.	Overcoatings.			
	Chrome calf, glazed finish, B grade.	Harness, oak.	Sole, hemlock.	Sole, oak.	Average.		Chinchilla, cotton warp, C. C. grade.	Covert cloth, light weight, staple.	Kersey, standard, 28-oz. (b)	Average.
Jan.....	117.1	124.2	136.7	114.5	123.2	102.1	93.2	96.9	148.3	113.4
Feb.....	117.1	119.1	128.9	114.5	120.2	102.1	90.1	96.9	148.3	112.2
Mar.....	117.1	119.1	128.9	113.0	119.8	102.1	90.1	96.9	148.3	112.2
Apr.....	117.1	119.1	128.9	110.0	118.9	102.1	90.1	96.9	148.3	112.2
May.....	111.9	119.1	123.8	111.5	116.8	102.1	90.1	96.9	148.3	112.2
June....	111.9	119.1	123.8	111.5	116.8	102.1	90.1	96.9	148.3	112.2
July.....	111.9	119.1	123.8	111.5	116.8	102.1	88.1	96.9	148.3	111.4
Aug.....	111.9	119.1	131.5	113.0	119.0	102.1	87.0	96.9	148.3	111.0
Sept....	111.9	119.1	131.5	113.0	119.0	102.1	88.1	96.9	148.3	111.4
Oct.....	111.9	124.2	131.5	113.0	120.2	102.1	87.0	96.9	148.3	111.0
Nov.....	111.9	124.2	131.5	113.0	120.2	102.1	87.0	96.9	148.3	111.0
Dec.....	111.9	127.7	131.5	117.5	122.3	102.1	87.0	96.9	148.3	111.0
1908.....	113.6	121.1	129.3	113.0	119.4	102.1	89.0	96.9	148.3	111.7

a Average for 1893-1899=100.0.

b Average for 1897-1899=100.0

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Cloths and clothing.									
	Print cloths: 28-inch, 64x64.	Sheetings.								
		Bleached.				Brown.				Average.
		9-4, Atlantic.	10-4, Pepperell.	10-4, Wamsutta S. T.	Average.	4-4, Indian Head.	Lawrence L. L.	4-4, Pepperell R.	Average.	
Jan.....	145.3	161.3	159.2	106.8	142.1	135.8	117.9	140.7	133.0	137.9
Feb.....	133.9	161.2	132.7	101.7	132.4	135.8	113.0	127.0	126.8	129.9
Mar.....	122.2	161.2	132.7	101.7	132.4	127.8	108.0	127.0	122.4	127.7
Apr.....	114.5	148.6	132.7	101.7	128.3	127.8	103.1	127.0	120.7	124.8
May.....	112.8	150.0	132.7	101.7	128.8	127.8	98.2	118.0	116.0	122.7
June....	114.5	149.6	122.1	89.0	120.3	119.8	98.2	122.5	114.8	117.8
July.....	114.5	[a] 149.6	122.1	89.0	120.3	119.8	95.9	122.5	114.0	117.4
Aug.....	108.4	123.6	122.1	89.0	111.9	119.8	98.2	122.5	114.8	113.4
Sept....	105.7	119.5	122.1	89.0	110.6	119.8	98.2	122.5	114.8	112.9
Oct.....	108.4	118.3	122.1	89.0	110.2	119.8	95.9	122.5	114.0	112.3
Nov.....	116.7	114.7	127.4	89.0	110.6	115.8	98.2	118.0	112.0	111.5
Dec.....	121.1	117.2	127.4	89.0	111.4	123.8	98.2	118.0	114.6	113.2
1908.....	118.0	138.7	129.6	94.7	121.3	124.4	102.0	124.0	118.1	120.0

Month.	Shirtings: bleached.					Silk: raw.		
	4-4, Fruit of the loom.	4-4, Lonsdale.	4-4, Wamsutta <o> XX.	4-4, Williamsville A1.	Average.	Italian, classical.	Japan, filatures.	Average.
Jan....	164.8	137.6	131.9	137.0	144.9	119.2	100.8	109.8
Feb....	130.5	127.2	131.9	114.2	128.8	102.9	100.8	101.8
Mar....	130.5	127.2	131.9	114.2	128.8	93.6	93.5	93.6
Apr....	130.5	127.2	131.9	114.2	128.8	86.7	88.7	87.7
May....	130.5	127.2	131.9	99.9	125.1	90.1	86.3	88.2
June...	113.3	110.0	108.1	99.9	110.0	91.3	88.7	90.0
July....	116.8	113.5	108.1	99.9	111.6	93.6	99.6	96.7
Aug....	116.8	113.5	108.1	99.9	111.6	97.7	99.6	98.7
Sept...	116.8	113.5	108.1	99.9	111.6	98.9	100.8	99.9
Oct....	116.8	113.5	108.1	99.9	111.6	100.0	100.8	100.4
Nov....	116.8	113.5	108.1	102.7	112.4	98.9	100.2	99.5
Dec....	120.2	116.9	108.1	102.7	114.0	105.8	102.0	103.9
1908....	125.4	120.1	118.0	107.1	120.0	98.2	96.8	97.5

Month.	Suitings.						Tickings: Amoskeag A. C. A.
	Clay worsted diagonal, 12-ounce, Washington Mills. ([b])	Clay worsted diagonal, 16-ounce, Washington Mills. ([b])	Indigo blue, all wool, 54-inch, 14-ounce, Middlesex.	Serge, Washington Mills 6700. ([c])	Trouserings, fancy worsted, 19 to 20 ounce. ([c])	Average.	
Jan.....	142.1	138.6	119.0	140.5	123.7	131.4	113.1
Feb....	142.1	138.6	119.0	140.5	123.7	131.4	113.1
Mar....	142.1	138.6	119.0	140.5	123.7	131.4	113.1
Apr....	142.1	138.6	119.0	140.5	123.7	131.4	113.1
May....	142.1	138.6	119.0	140.5	123.7	131.4	113.1
June....	142.1	138.6	119.0	140.5	123.7	131.4	99.0
July....	128.4	127.4	119.0	122.6	123.7	123.2	99.0
Aug....	128.4	127.4	119.0	122.6	123.7	123.2	99.0
Sept....	128.4	127.4	119.0	122.6	123.7	123.2	99.0
Oct.....	128.4	127.4	119.0	122.6	123.7	123.2	99.0
Nov....	128.4	127.4	119.0	122.6	129.3	124.5	106.0
Dec.....	128.4	127.4	119.0	128.6	129.8	125.6	106.0
1908....	135.2	133.0	119.0	132.0	124.6	127.6	106.0

[a] Nominal price; see explanation on page 232.
[b] Average for 1895-1899=100.0.
[c] Average for 1892-1899=100.0.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Cloths and clothing.									
	Underwear.			Women's dress goods.						
	Shirts and drawers, white, all wool, etc.	Shirts and drawers, white, merino, wool and cotton.	Average.	Cashmere, all wool, 8-9 twill, 35-inch, Atlantic Mills.	Cashmere, cotton warp, 9-twill, 4-4, Atlantic F.	Cashmere, cotton warp, 36-inch, Hamilton.	Panama cloth, 54-inch.	Poplar cloth, cotton warp and worsted filling, 36-inch.	Sicilian cloth, cotton warp, 50-inch.	Average.
Jan....	115.8	106.0	110.9	127.1	138.6	127.8	126.8	115.4	124.9	127.2
Feb....	115.8	106.0	110.9	127.1	138.6	127.8	126.8	115.4	124.9	127.2
Mar....	115.8	106.0	110.9	127.1	138.6	127.8	126.8	115.4	124.9	127.2
Apr....	115.8	106.0	110.9	127.1	138.6	124.6	126.8	115.4	124.9	126.6
May....	115.8	106.0	110.9	127.1	138.6	124.6	126.8	115.4	124.9	126.6
June...	115.8	106.0	110.9	127.1	138.6	124.6	126.8	115.4	124.9	126.6
July....	115.8	106.0	110.9	127.1	138.6	124.6	126.8	115.4	124.9	126.6
Aug....	115.8	106.0	110.9	127.1	138.6	124.6	126.8	115.4	124.9	126.6
Sept...	115.8	106.0	110.9	127.1	138.6	124.6	126.8	109.6	124.9	125.5
Oct....	115.8	106.0	110.9	127.1	138.6	121.4	126.8	109.6	124.9	125.0
Nov....	115.8	106.0	110.9	127.1	138.6	121.4	126.8	109.6	124.9	125.0
Dec....	115.8	106.0	110.9	127.1	138.6	121.4	126.8	109.6	124.9	125.0
1908....	115.8	106.0	110.9	127.1	138.6	124.6	126.8	113.5	124.9	126.3

Month.	Wool.			Worsted yarns.			Average cloths and clothing.
	Ohio, fine fleece (X and XX grade), scoured.	Ohio, medium fleece (¼ and ⅜ grade), scoured.	Average.	2-40s, Australian fine.	2-32s, cross-bred stock, white, in skeins.	Average.	
Jan.....	127.1	109.6	118.3	124.7	125.5	125.2	124.0
Feb....	127.1	106.6	116.7	122.8	125.5	124.2	121.2
Mar....	127.1	106.6	116.7	119.8	125.5	122.7	119.9
Apr....	127.1	106.6	116.7	119.8	114.1	117.0	118.5
May....	127.1	103.6	115.1	119.8	114.1	117.0	117.6
June....	127.1	103.6	115.1	117.8	108.4	113.2	114.7
July....	130.9	106.6	118.5	119.8	108.4	114.2	114.5
Aug....	130.9	106.6	118.5	119.8	108.4	114.2	114.4
Sept....	130.9	109.6	120.1	119.8	108.4	114.2	114.2
Oct.....	130.9	109.6	120.1	119.8	108.4	114.2	114.2
Nov....	134.8	109.6	121.9	122.8	108.4	115.6	114.8
Dec.....	134.8	109.6	121.9	122.8	117.0	119.9	115.6
1908....	129.6	107.3	118.3	120.8	114.4	117.6	116.9

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Fuel and lighting.										
	Candles: adamantine, 6s, 14-ounce.	Coal.									
		Anthracite.					Bituminous.				Average.
		Broken.	Chestnut.	Egg.	Stove.	Average.	Georges Creek (at mine).	Georges Creek (f. o. b. New York Harbor).	Pittsburg (Youghiogheny).	Average.	
Jan	95.9	125.0	137.6	137.8	130.4	132.7	168.8	114.8	134.2	139.5	135.7
Feb	95.9	124.9	137.7	137.7	130.4	132.7	168.8	113.0	132.2	138.1	135.1
Mar	95.9	124.7	137.7	137.7	130.4	132.7	168.8	113.0	132.2	138.1	135.0
Apr	92.7	124.7	123.8	123.8	117.3	122.6	168.8	113.0	132.2	138.1	129.1
May	92.7	124.8	126.1	126.1	119.5	124.3	157.5	109.4	132.2	133.6	128.3
June	92.7	124.9	129.2	129.3	122.4	126.6	157.5	111.2	132.2	134.3	129.9
July	92.7	124.8	131.8	132.1	125.1	128.5	151.9	111.2	132.2	132.8	130.4
Aug	92.7	124.7	134.7	134.4	127.8	130.5	157.5	111.2	132.2	134.3	132.2
Sept	92.7	124.7	137.4	137.4	130.3	132.5	157.5	111.2	132.2	134.3	133.4
Oct	92.7	124.7	137.7	137.7	130.4	132.7	163.2	113.0	132.2	136.5	134.4
Nov	92.7	124.7	137.7	137.7	130.4	132.7	163.2	113.0	132.2	136.5	134.4
Dec	92.7	124.7	137.6	137.7	130.4	132.7	163.2	113.0	132.2	136.5	134.4
1908	93.5	124.8	134.1	134.1	127.1	130.1	162.2	112.3	132.3	136.1	132.7

Month.	Coke: Connellsville, furnace.	Matches: parlor, domestic.	Petroleum.					Average fuel and lighting.
			Crude.	Refined.			Average.	
				For export.	150° fire test, w. w.	Average.		
Jan	125.1	85.4	195.6	134.8	151.7	143.6	160.9	134.3
Feb	101.6	85.4	195.6	134.8	151.7	143.6	160.9	132.5
Mar	107.5	85.4	195.6	134.8	151.7	143.6	160.9	132.9
Apr	94.2	85.4	195.6	134.8	151.7	143.6	160.9	128.5
May	91.3	85.4	195.6	134.8	151.7	143.6	160.9	127.8
June	95.7	85.4	195.6	134.8	151.7	143.6	160.9	129.0
July	94.2	85.4	195.6	134.8	151.7	143.6	160.9	129.2
Aug	95.7	85.4	195.6	134.8	151.7	143.6	160.9	130.2
Sept	88.3	85.4	195.6	134.8	151.7	143.6	160.9	130.4
Oct	88.3	85.4	195.6	131.0	151.7	141.5	159.4	130.7
Nov	107.5	85.4	195.6	131.0	151.7	141.5	159.4	131.9
Dec	117.8	85.4	195.6	131.0	151.7	141.5	159.4	132.5
1908	100.6	85.4	195.6	133.9	151.7	143.1	160.6	130.8

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Metals and implements.											
	Bar iron.				Builders' hardware.				Copper.			
	Best refined, from store (Philadelphia market).	Common to best refined (Pittsburg market).	Average.	Barb wire: galvanized.	Butts: loose pin, wrought steel, 3½ x 3½ inch.	Door-knobs: steel, bronze plated.	Locks: common mortise.	Average.	Ingot, electrolytic.	Sheet, hot-rolled (base sizes).	Wire, bare.	Average.
Jan....	107.3	120.0	113.6	106.1	126.6	235.7	203.2	192.3	115.0	120.6	112.7	116.1
Feb....	107.3	105.0	106.2	106.1	126.6	235.7	203.2	192.3	112.9	120.6	112.7	115.5
Mar....	107.3	111.8	109.6	106.1	126.6	235.7	203.2	192.3	104.1	102.5	99.0	101.9
Apr....	107.3	111.8	109.6	106.1	126.6	235.7	203.2	192.3	107.7	102.5	100.8	103.6
May...	107.3	111.8	109.6	106.1	126.6	235.7	203.2	192.3	104.8	102.5	100.8	102.7
June...	101.2	111.8	106.5	102.1	126.6	235.7	203.2	192.3	105.2	102.5	100.8	102.8
July....	101.2	105.0	103.1	102.1	126.6	235.7	203.2	192.3	105.2	102.5	100.8	102.8
Aug....	101.2	105.0	103.1	102.1	126.6	235.7	203.2	192.3	111.9	102.5	99.0	104.4
Sept...	101.2	105.0	103.1	102.1	126.6	235.7	203.2	192.3	113.9	108.5	104.2	108.8
Oct....	101.2	105.0	103.1	102.1	126.6	235.7	203.2	192.3	112.3	108.5	104.2	108.3
Nov....	101.2	105.0	103.1	102.1	126.6	235.7	203.2	192.3	114.4	108.5	102.5	108.4
Dec....	101.2	112.5	106.8	102.1	126.6	235.7	203.2	192.3	119.2	114.5	107.6	113.7
1908....	103.7	109.5	106.6	103.8	126.6	235.7	203.2	192.3	110.5	108.0	103.8	107.4

Month.	Lead: pig.	Lead pipe.	Nails.			Pig iron.				
			Cut, 8-penny, fence and common.	Wire, 8-penny, fence and common.	Average.	Bessemer.	Foundry No. 1.	Foundry No. 2.	Gray forge, southern, coke.	Average.
Jan....	97.1	97.1	116.3	99.5	108.0	137.9	126.3	138.1	135.3	134.9
Feb....	99.2	88.2	116.3	99.5	108.0	129.9	126.7	131.4	130.8	130.2
Mar....	98.4	88.2	110.8	99.5	105.5	129.6	125.8	128.5	130.8	129.2
Apr....	105.0	90.3	110.8	99.5	105.5	126.9	122.6	125.6	126.2	125.9
May....	110.2	95.5	110.8	99.5	105.5	123.1	117.8	127.7	124.0	123.6
June...	112.9	98.6	106.7	99.5	103.6	122.7	115.6	121.8	126.2	122.0
July....	118.1	103.8	101.2	94.8	98.6	122.1	114.8	121.8	126.2	121.6
Aug....	120.7	103.8	102.6	94.8	99.2	118.0	114.8	118.9	128.5	120.4
Sept...	120.5	105.8	101.2	94.8	98.6	115.4	115.6	118.9	130.8	120.4
Oct....	118.9	105.8	101.2	94.8	98.6	114.3	116.5	117.4	130.8	120.0
Nov....	115.0	103.8	101.2	94.8	98.6	120.4	118.2	118.0	130.8	122.2
Dec....	113.9	99.6	101.2	94.8	98.6	126.3	119.9	125.6	135.3	127.1
1908....	110.8	98.4	106.7	97.1	102.4	123.9	119.6	124.5	129.6	124.8

Month.	Quicksilver.	Silver: bar, fine.	Spelter: western.	Steel billets.	Steel rails.	Steel sheets: black, No. 27.(a)	Tin: pig.	Tin plates: domestic, Bessemer, coke, 14 x 20 inch.(b)
Jan....	109.1	75.1	98.0	130.1	107.4	107.1	145.7	113.9
Feb....	109.1	75.6	104.6	130.1	107.4	107.1	155.8	113.9
Mar....	109.1	74.8	105.1	130.1	107.4	107.1	165.5	113.9
Apr....	109.1	73.6	104.6	130.1	107.4	107.1	170.2	113.9
May....	109.1	71.3	103.5	130.1	107.4	107.1	169.1	113.9
June...	107.3	72.5	101.3	119.6	107.4	107.1	157.1	113.9
July....	106.4	71.8	99.6	116.1	107.4	107.1	148.1	113.9
Aug....	105.5	69.8	106.9	116.1	107.4	107.1	167.4	113.9
Sept...	107.3	69.9	105.1	116.1	107.4	107.1	158.0	113.9
Oct....	110.9	69.5	107.3	116.1	107.4	107.1	160.7	113.9
Nov....	114.4	67.2	110.2	116.1	107.4	107.1	165.5	113.9
Dec....	111.7	66.0	114.8	116.1	107.4	107.1	160.1	113.9
1908....	109.1	71.4	105.1	122.2	107.4	107.1	160.2	113.9

[a] Average for the period July, 1894, to December, 1899=100.0.
[b] Average for 1896-1899=100.0.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Metals and implements.								
	Tools.								
	Augers: extra, 1-inch.	Axes: M. C. O., Yankee.	Chisels: extra, socket firmer, 1-inch.	Files: 8-inch mill bastard.	Hammers: Maydole No. 1½.	Planes: Bailey No. 5, jack plane.	Saws.		
							Crosscut, Disston No. 2.	Hand, Disston No. 7.	Average.
Jan.....	223.9	144.9	198.0	113.8	129.0	115.7	100.0	101.3	100.7
Feb....	223.9	144.9	198.0	113.8	129.0	115.7	100.0	101.3	100.7
Mar....	223.9	144.9	198.0	113.8	129.0	115.7	100.0	101.3	100.7
Apr....	223.9	144.9	198.0	113.8	129.0	115.7	100.0	101.3	100.7
May....	223.9	144.9	198.0	112.6	129.0	115.7	100.0	101.3	100.7
June....	223.9	144.9	198.0	112.6	129.0	115.7	100.0	101.3	100.7
July....	223.9	144.9	198.0	111.4	129.0	115.7	100.0	101.3	100.7
Aug....	223.9	144.9	198.0	110.2	129.0	115.7	100.0	101.3	100.7
Sept....	223.9	144.9	198.0	110.2	129.0	115.7	100.0	101.3	100.7
Oct.....	223.9	144.9	198.0	110.2	129.0	115.7	100.0	101.3	100.7
Nov....	223.9	144.9	198.0	110.2	129.0	115.7	100.0	101.3	100.7
Dec.....	223.9	144.9	198.0	110.2	129.0	115.7	100.0	101.3	100.7
1908....	223.9	144.9	198.0	111.9	129.0	115.7	100.0	101.3	100.7

Month.	Tools.				Wood screws: 1-inch, No. 10, flat head.	Zinc: sheet.	Average metals and implements.
	Shovels: Ames No. 2.	Trowels: M. C. O., brick, 10½-inch.	Vises: solid box, 50-pound.	Average.			
Jan.....	99.7	100.0	147.4	113.8	66.2	121.3	127.4
Feb....	99.7	100.0	147.4	113.8	66.2	121.3	126.7
Mar....	99.7	100.0	147.4	113.8	66.2	121.3	125.9
Apr....	99.7	100.0	147.4	113.8	66.2	121.3	125.9
May....	99.7	100.0	147.4	113.7	66.2	121.3	125.8
June....	99.7	100.0	147.4	113.7	66.2	121.3	124.8
July....	99.7	100.0	147.4	113.6	66.2	121.3	124.0
Aug....	99.7	100.0	147.4	113.5	66.2	121.3	124.5
Sept....	99.7	100.0	147.4	113.5	66.2	121.3	124.7
Oct.....	99.7	100.0	147.4	113.5	66.2	121.3	124.8
Nov....	99.7	100.0	147.4	113.5	66.2	121.3	125.1
Dec.....	96.9	100.0	147.4	113.2	66.2	121.3	125.7
1908.....	99.4	100.0	147.4	113.6	66.2	121.3	125.4

Month.	Lumber and building materials.							
	Brick: common domestic.	Carbonate of lead: American, in oil.	Cement.			Doors: western white pine.	Lime: common.	Linseed oil: raw.
			Portland, domestic.(a)	Rosendale.	Average.			
Jan....	98.9	110.4	77.6	107.1	92.0	185.9	125.4	97.0
Feb....	98.9	110.4	72.6	107.1	89.2	185.9	125.4	97.0
Mar....	94.4	110.4	72.6	107.1	89.2	155.9	125.4	94.8
Apr....	96.6	110.4	72.6	107.1	89.2	155.9	125.4	94.8
May....	85.4	110.4	72.6	107.1	89.2	155.9	125.4	92.6
June...	83.1	110.4	72.6	107.1	89.2	155.9	125.4	97.0
July....	83.1	114.7	72.6	107.1	89.2	155.9	125.4	97.0
Aug....	80.9	114.7	72.6	107.1	89.2	155.9	125.4	97.0
Sept...	80.9	114.7	72.6	107.1	89.2	155.9	125.4	97.0
Oct....	85.4	114.7	72.6	107.1	89.2	155.9	125.4	94.8
Nov....	103.4	114.7	72.6	107.1	89.2	155.9	125.4	92.6
Dec....	110.1	114.7	72.6	107.1	89.2	161.0	125.4	105.8
1908....	91.8	112.7	73.1	107.1	89.5	161.3	125.4	96.5

[a] Average for 1895-1899=100.0.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Lumber and building materials.									
	Lumber.									
	Hemlock.	Maple: hard.	Oak: white.			Pine.				
			Plain.	Quartered.	Average.	White boards.			Yellow, siding and flooring. (a)	Average.(a)
						No. 2 barn.	Uppers.	Average.		
Jan....	183.9	122.6	144.3	149.0	146.7	197.4	203.1	200.3	166.9	189.1
Feb....	183.9	122.6	138.9	149.0	144.0	197.4	203.1	200.3	166.9	189.1
Mar....	179.7	122.6	138.9	149.0	144.0	197.4	203.1	200.3	173.0	192.5
Apr....	175.5	122.6	138.9	149.0	144.0	197.4	203.1	200.3	173.0	192.5
May....	175.5	122.6	138.9	149.0	144.0	197.4	203.1	200.3	173.0	192.5
June...	175.5	117.0	124.2	149.0	136.6	184.4	196.9	190.7	177.0	190.2
July....	175.5	117.0	124.2	149.0	136.6	184.4	196.9	190.7	177.0	190.2
Aug....	175.5	117.0	124.2	149.0	136.6	184.4	196.9	190.7	171.0	186.8
Sept...	167.2	117.0	126.9	149.0	137.9	184.4	192.8	188.6	171.0	185.8
Oct....	167.2	117.0	126.9	149.0	137.9	184.4	192.8	188.6	171.0	185.8
Nov. ..	167.2	117.0	126.9	149.0	137.9	184.4	192.8	188.6	171.0	185.8
Dec....	167.2	117.0	126.9	152.8	139.8	189.6	192.8	191.3	171.0	187.1
1908....	174.5	119.3	131.7	149.3	140.5	190.3	198.1	194.2	171.8	189.0

Month.	Lumber.			Oxide of zinc.	Plate glass: polished, glazing.			Putty.	Rosin: good, strained.
	Poplar.	Spruce.	Average. (a)		Area, 3 to 5 square feet.	Area, 5 to 10 square feet.	Average.		
Jan.....	189.7	146.4	167.2	128.3	70.5	75.4	73.0	75.9	222.2
Feb.....	180.1	146.4	165.7	128.3	70.5	75.4	73.0	75.9	277.8
Mar.....	186.5	146.4	167.2	128.3	53.7	61.3	57.5	75.9	260.4
Apr.....	191.3	146.4	167.2	128.3	53.7	61.3	57.5	75.9	270.9
May....	191.3	146.4	167.2	128.3	53.7	61.3	57.5	75.9	250.0
June....	181.7	135.9	162.0	128.3	53.7	61.3	57.5	75.9	204.9
July....	181.7	135.9	162.0	128.3	53.7	61.3	57.5	75.9	218.8
Aug....	181.7	135.9	160.8	128.3	53.7	61.3	57.5	75.9	208.3
Sept....	186.5	142.9	161.1	128.3	53.7	61.3	57.5	75.9	194.5
Oct.....	186.5	142.9	161.1	128.3	53.7	61.3	57.5	75.9	200.0
Nov.....	186.5	149.8	161.8	128.3	60.4	66.0	63.2	75.9	201.4
Dec.....	186.5	163.8	164.1	128.3	67.1	70.7	68.9	75.9	225.7
1908.....	185.8	144.9	164.0	128.3	58.2	64.8	61.5	75.9	227.9

Month.	Shingles.			Tar.	Turpentine: spirits of.	Window glass: American, single.			Average lumber and building materials.(a)
	Cypress.	Red cedar.	Average.			Firsts, 6 x 8 to 10 x 15 inches.	Thirds, 6 x 8 to 10 x 15 inches.	Average.	
Jan.....	136.5	159.8	149.0	[b] 132.8	130.1	126.4	119.2	122.8	138.9
Feb....	136.5	152.7	145.8	[b] 132.8	166.0	104.1	98.1	101.1	138.1
Mar....	136.5	149.2	144.3	107.9	160.0	119.0	112.1	115.6	135.2
Apr....	127.6	149.2	139.2	124.5	169.0	119.0	112.1	115.6	135.9
May....	127.6	135.0	132.9	132.8	142.1	89.2	84.1	86.7	131.6
June....	127.6	138.5	134.5	124.5	130.1	89.2	84.1	86.7	128.8
July....	118.7	138.5	129.4	124.5	125.6	89.2	84.1	86.7	128.8
Aug....	118.7	138.5	129.4	124.5	122.6	111.6	105.1	108.3	129.9
Sept....	118.7	156.3	137.3	116.2	116.7	119.0	112.1	115.6	130.4
Oct.....	118.7	131.4	126.2	157.7	116.7	119.0	112.1	115.6	131.1
Nov....	118.7	131.4	126.2	157.7	119.7	111.6	105.1	108.3	132.3
Dec.....	118.7	135.0	127.8	157.7	128.6	119.0	112.1	115.6	136.3
1908....	125.4	143.0	135.2	132.8	135.6	109.7	103.4	106.5	133.1

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[a] Including yellow pine flooring, see explanation, page 231.
[b] Nominal price, see explanation on page 232.

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Continued.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Drugs and chemicals.									
	Alcohol: grain.	Alcohol: wood, refined, 95 per cent.	Alum: lump.	Brimstone: crude, seconds.	Glycerin: refined.	Muriatic acid: 20°.	Opium: natural, in cases.	Quinine: American.	Sulphuric acid: 60°.	Average, drugs and chemicals.
Jan ...	117.4	40.9	104.8	94.2	114.4	129.8	211.8	65.0	112.4	109.5
Feb....	117.4	40.9	104.8	106.3	114.4	129.8	192.8	65.0	123.6	111.1
Mar....	117.4	40.9	104.8	106.3	114.4	129.8	190.7	65.0	123.6	110.9
Apr....	117.4	40.9	104.8	106.3	110.8	129.8	185.4	65.0	123.6	110.2
May ...	117.4	40.9	104.8	106.3	101.9	129.8	192.8	65.0	101.1	107.1
June...	117.4	43.0	104.8	106.3	98.3	129.8	190.7	65.0	112.4	108.4
July ...	117.4	48.2	104.8	106.3	96.5	129.8	243.6	65.0	112.4	112.7
Aug....	117.4	48.2	104.8	106.3	96.5	129.8	233.0	65.0	112.4	112.1
Sept...	118.3	48.2	104.8	106.3	103.6	129.8	211.8	61.0	112.4	111.2
Oct....	118.3	47.2	104.8	106.3	103.6	129.8	190.7	61.0	112.4	109.7
Nov....	118.3	49.3	104.8	106.3	107.2	129.8	182.2	61.0	112.4	110.2
Dec....	118.3	49.3	104.8	106.3	117.9	129.8	171.6	61.0	112.4	110.9
1908....	117.7	44.8	104.8	105.3	106.6	129.8	199.8	63.7	114.6	110.4

Month.	House furnishing goods.								
	Earthenware.				Furniture.				
	Plates, cream-colored.	Plates, white granite.	Teacups and saucers, white granite.	Average.	Bedroom sets, hard wood.	Chairs, bedroom, maple.	Chairs, kitchen.	Tables, kitchen.	Average.
Jan.....	104.0	102.4	98.8	101.7	137.4	161.4	156.8	124.7	145.0
Feb....	104.0	102.4	98.8	101.7	137.4	161.4	156.8	124.7	145.0
Mar....	104.0	102.4	98.8	101.7	137.4	161.4	156.8	124.7	145.0
Apr....	104.0	102.4	98.8	101.7	137.4	161.4	156.8	124.7	145.0
May....	104.0	102.4	98.8	101.7	137.4	161.4	156.8	124.7	145.0
June....	104.0	102.4	98.8	101.7	137.4	145.3	156.8	124.7	141.4
July....	104.0	102.4	98.8	101.7	131.3	145.3	156.8	124.7	139.8
Aug....	104.0	102.4	98.8	101.7	131.3	145.3	156.8	124.7	139.8
Sept....	104.0	102.4	98.8	101.7	131.3	145.3	156.8	124.7	139.8
Oct.....	104.0	102.4	98.8	101.7	131.3	145.3	156.8	124.7	139.8
Nov....	104.0	102.4	98.8	101.7	131.3	145.3	156.8	124.7	139.8
Dec.....	104.0	102.4	98.8	101.7	131.3	145.3	156.8	124.7	139.8
1908	104.0	102.4	98.8	101.7	134.3	152.0	156.8	124.7	142.1

Month.	Glassware.				Table cutlery.			Wooden ware.			Average house-furnishing goods.
	Nappies, 4-inch.	Pitchers, ½-gallon, common.	Tumblers, ½-pint, common.	Average.	Carvers, stag handles.	Knives and forks, cocobolo handles.	Average.	Pails, oak-grained.	Tubs, oak-grained.	Average.	
Jan.....	116.1	89.4	84.5	97.2	93.8	90.8	92.4	161.7	122.5	141.9	117.0
Feb....	116.1	89.4	84.5	97.2	93.8	90.8	92.4	161.7	122.5	141.9	117.0
Mar....	116.1	89.4	84.5	97.2	93.8	90.8	92.4	161.7	122.5	141.9	117.0
Apr....	116.1	89.4	84.5	97.2	93.8	90.8	92.4	161.7	122.5	141.9	117.0
May....	116.1	89.4	84.5	97.2	93.8	90.8	92.4	161.7	122.5	141.9	117.0
June....	116.1	89.4	67.6	90.6	93.8	90.8	92.4	161.7	122.5	141.9	114.5
July....	116.1	89.4	67.6	90.6	93.8	90.8	92.4	161.7	122.5	141.9	114.1
Aug....	98.2	71.5	67.6	79.2	93.8	90.8	92.4	161.7	122.5	141.9	111.2
Sept....	98.2	71.5	67.6	79.2	93.8	90.8	92.4	161.7	122.5	141.9	111.2
Oct.....	98.2	71.5	67.6	79.2	93.8	90.8	92.4	161.7	122.5	141.9	111.2
Nov....	98.2	71.5	67.6	79.2	93.8	82.5	88.4	161.7	122.5	141.9	110.5
Dec.....	98.2	71.5	67.6	79.2	93.8	82.5	88.4	161.7	122.5	141.9	110.5
1908....	108.9	82.0	74.6	88.7	93.8	89.4	91.8	161.7	122.5	141.9	114.0

TABLE III.—MONTHLY RELATIVE PRICES OF COMMODITIES IN 1908—Concluded.

[Average price for 1890-1899=100.0. Relative price for 1908 computed from average price for the year shown in Table I.]

Month.	Miscellaneous.							
	Cotton-seed meal.	Cotton-seed oil: summer yellow, prime.	Jute: raw.	Malt: western made.	Paper.			Proof spirits.
					News.	Wrapping, manila.	Average.	
Jan....	130.2	123.2	142.3	172.1	88.6	94.9	91.8	117.4
Feb....	130.2	133.0	123.3	167.2	88.6	94.9	91.8	117.4
Mar....	127.9	121.6	123.3	167.2	88.0	94.9	91.5	117.4
Apr....	132.5	138.0	132.8	148.0	88.6	92.8	90.8	117.4
May....	134.8	142.9	147.2	142.3	88.6	92.8	90.8	117.4
June...	134.8	156.9	142.3	117.4	88.6	92.8	90.8	117.4
July....	134.8	154.4	147.2	120.9	88.6	92.8	90.8	117.4
Aug....	134.8	140.4	161.3	120.9	77.9	85.9	81.9	117.4
Sept...	139.3	122.4	156.7	115.2	77.9	85.9	81.9	118.8
Oct....	134.8	131.4	151.8	108.1	77.9	85.9	81.9	119.1
Nov....	137.1	122.4	132.8	108.1	70.2	85.9	77.9	119.1
Dec....	134.8	125.7	123.3	104.6	69.6	85.9	77.5	119.1
1908....	133.8	134.4	140.4	132.7	82.9	90.4	86.7	118.0

Month.	Rope: manila.	Rubber: Para Island.	Soap: castile, mottled, pure.	Starch: laundry.	Tobacco.			Average, miscellaneous.
					Plug.	Smoking, gran., Seal of N. C.	Average.	
Jan....	123.1	95.5	123.0	122.1	118.6	117.9	118.3	122.6
Feb....	123.1	89.0	123.0	122.1	118.6	117.9	118.3	121.4
Mar....	120.4	86.8	123.0	122.1	118.6	117.9	118.3	120.1
Apr....	113.8	94.0	123.0	122.1	118.6	117.9	118.3	120.6
May....	113.8	100.5	123.0	122.1	118.6	117.9	118.3	121.9
June...	108.5	109.3	123.0	122.1	118.6	117.9	118.3	121.1
July....	107.1	110.5	123.0	122.1	118.6	117.9	118.3	121.5
Aug....	104.4	106.8	123.0	122.1	118.6	117.9	118.3	118.9
Sept...	101.7	113.0	123.0	129.3	118.6	117.9	118.3	118.5
Oct....	96.4	120.5	123.0	129.3	118.6	117.9	118.3	118.2
Nov....	96.4	131.1	123.0	129.3	118.6	117.9	118.3	116.7
Dec....	95.1	148.0	123.0	129.3	118.6	117.9	118.3	117.1
1908....	108.7	108.8	123.0	124.4	118.6	117.9	118.3	119.9

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899).

[For explanation and discussion of this table, see page 239. For a more detailed description of the articles, see Table I.]

Year.	Farm products.									
	Barley: by sample.		Cattle: steers, choice to extra.		Cattle: steers, good to choice.		Corn: cash.		Cotton: upland, middling.	
	Average price per bushel.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per bushel.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899..	$0.4534	100.0	$5.3203	100.0	$4.7347	100.0	$0.3804	100.0	$0.07762	100.0
1890..................	.5062	111.6	4.8697	91.5	4.1375	87.4	.3950	103.8	.11089	142.9
1891..................	.6098	134.5	5.8851	110.6	5.0976	107.7	.5744	151.0	.08603	110.8
1892..................	.5085	112.2	5.0909	95.7	4.4995	95.0	.4500	118.3	.07686	99.0
1893..................	.4685	103.3	5.5211	103.8	4.8394	102.2	.3904	104.2	.08319	107.2
1894..................	.5134	113.2	5.1591	97.0	4.5245	95.6	.4326	113.7	.07002	90.2
1895..................	.4300	94.8	5.4849	103.1	4.9344	104.2	.3955	104.0	.07298	94.0
1896..................	.2977	65.7	4.5957	86.4	4.2712	90.2	.2580	67.8	.07918	102.0
1897..................	.3226	71.2	5.2255	98.2	4.7736	100.8	.2546	66.9	.07153	92.2
1898..................	.4348	95.9	5.3779	101.1	4.8846	103.2	.3144	82.6	.05972	76.9
1899..................	.4425	97.6	5.9928	112.6	5.3851	113.7	.3333	87.6	.06578	84.7
1900..................	.4815	106.2	5.7827	108.7	5.3938	113.9	.3811	100.2	.09609	123.8
1901..................	.5884	129.8	6.1217	115.1	5.5901	118.1	.4969	130.6	.08627	111.1
1902..................	.6321	139.4	7.4721	140.4	6.5572	138.5	.5968	156.9	.08932	115.1
1903..................	.5494	121.2	5.5678	104.7	5.0615	106.9	.4606	121.1	.11235	144.7
1904..................	.5300	116.9	5.9562	112.0	5.1923	109.7	.5046	132.6	.12100	155.9
1905..................	.4850	107.0	5.9678	112.2	5.2192	110.2	.5010	131.7	.09553	123.1
1906..................	.5116	112.8	6.1298	115.2	5.3572	113.1	.4632	121.8	.11025	142.0
1907..................	.7663	169.0	6.5442	123.0	5.8120	122.8	.5280	138.8	.11879	153.0
1908..................	.7336	161.8	6.8163	128.1	5.9976	126.7	.6843	179.9	.10463	134.8

Year.	Flaxseed: No. 1.		Hay: timothy, No. 1.		Hides: green, salted, packers', heavy native steers.		Hogs: heavy.		Hogs: light.	
	Average price per bushel.	Relative price.	Average price per ton.	Relative price.	Average price per pound.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per 100 lbs.	Relative price.
Average, 1890-1899..	$1.1132	100.0	$10.4304	100.0	$0.0937	100.0	$4.4123	100.0	$4.4206	100.0
1890..................	1.3967	125.5	9.9952	95.8	.0933	99.6	3.9534	89.6	3.9260	88.8
1891..................	1.0805	97.1	12.2861	117.8	.0951	101.5	4.4229	100.2	4.3404	98.2
1892..................	1.0179	91.4	11.8375	113.5	.0870	92.8	5.1550	116.8	5.0675	114.6
1893..................	1.0875	97.7	11.2067	107.4	.0749	79.9	6.5486	148.4	6.5752	148.7
1894..................	1.3533	121.6	10.4183	99.9	.0641	68.4	4.9719	112.7	4.9327	111.6
1895..................	1.2449	111.8	11.3844	109.1	.1028	109.7	4.2781	97.0	4.2533	96.2
1896..................	.8119	72.9	10.3269	99.0	.0811	86.6	3.3579	76.1	3.5591	80.5
1897..................	.8696	78.1	8.4423	80.9	.0996	106.3	3.5906	81.4	3.7223	84.2
1898..................	1.1115	99.8	8.3317	79.9	.1151	122.8	3.8053	86.2	3.7587	85.0
1899..................	1.1578	104.0	10.0745	96.6	.1235	131.8	4.0394	91.5	4.0709	92.1
1900..................	1.6223	145.7	11.5673	110.9	.1194	127.4	5.0815	115.2	5.1135	115.7
1901..................	1.6227	145.8	12.8255	123.0	.1237	132.0	5.9580	135.0	5.9177	133.9
1902..................	1.5027	135.0	12.6154	120.9	.1338	142.8	6.9704	158.0	6.7353	152.4
1903..................	1.0471	94.1	12.4279	119.2	.1169	124.8	6.0572	137.3	6.0541	137.0
1904..................	1.1088	99.6	11.7308	112.5	.1166	124.4	5.1550	116.8	5.1481	116.5
1905..................	1.1979	107.6	11.2596	107.9	.1430	152.6	5.2913	119.9	5.3213	120.4
1906..................	1.1027	99.1	12.9615	124.3	.1543	164.7	6.2351	141.3	6.3274	143.1
1907..................	1.1808	106.1	16.9387	162.4	.1455	155.3	6.0795	137.8	6.2163	140.6
1908..................	1.2019	108.0	12.3365	118.3	.1336	142.6	5.7986	131.4	5.6346	127.5

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Farm products.									
	Hops: N. Y. State, choice.		Oats: cash.		Rye: No. 2, cash.		Sheep: native.		Sheep: western.	
	Average price per pound.	Relative price.	Average price per bushel.	Relative price.	Average price per bushel.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per 100 lbs.	Relative price.
Average, 1890-1899..	$0.1771	100.0	$0.2688	100.0	$0.5288	100.0	$3.7580	100.0	$3.9541	100.0
1890..................	.2621	148.0	.3106	115.6	.5447	103.0	4.5284	120.5	4.6644	118.0
1891..................	.2640	149.1	.3873	144.1	.8334	157.6	4.5106	120.0	4.5719	115.6
1892..................	.2505	141.4	.3042	113.2	.6754	127.7	4.7798	127.2	4.8695	123.2
1893..................	.2271	128.2	.2827	105.2	.4899	92.6	3.8781	103.2	4.1255	104.3
1894..................	.1515	85.5	.3110	115.7	.4660	88.1	2.6957	71.7	2.9808	75.4
1895..................	.0940	53.1	.2373	88.3	.4825	91.2	2.9495	78.5	3.0943	78.3
1896..................	.0877	49.5	.1801	67.0	.3517	66.5	2.9322	78.0	3.1411	79.4
1897..................	.1160	65.5	.1825	67.9	.3962	74.9	3.4971	93.1	3.7692	95.3
1898..................	.1621	91.5	.2470	91.9	.4958	93.8	3.9250	104.4	4.1625	105.3
1899..................	.1563	88.3	.2452	91.2	.5521	104.4	3.8837	103.3	4.1615	105.2
1900..................	.1483	83.7	.2271	84.5	.5177	97.9	4.1236	109.7	4.5207	114.3
1901..................	.1719	97.1	.3179	118.3	.5328	100.8	3.3519	89.2	3.7442	94.7
1902..................	.2375	134.1	.3960	147.3	.5418	102.5	3.7817	100.6	4.1784	105.7
1903..................	.2825	159.5	.3541	131.7	.5156	97.5	3.7101	98.7	3.8769	98.0
1904..................	.3475	196.2	.3649	135.8	.7056	133.4	4.1457	110.3	4.2608	107.8
1905..................	.2673	150.9	.2990	111.2	.7113	134.5	5.0529	134.5	5.0798	128.5
1906..................	.1629	92.0	.3282	122.1	.6107	115.5	4.9481	131.7	5.2793	133.5
1907..................	.1738	98.1	.4501	167.4	.7688	145.4	4.8962	130.3	4.8835	123.5
1908..................	.1188	67.1	.5095	189.5	.7825	148.0	[a] 4.9505	[a] 112.3	[b] 4.8115	[b] 109.6

Year.	Farm products.		Food, etc.							
	Wheat: cash.		Beans: medium, choice.		Bread: crackers, butter.		Bread: crackers, soda.		Bread: loaf (Wash. market).	
	Average price per bushel.	Relative price.	Average price per bushel.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound. (c)	Relative price.
Average, 1890-1899..	$0.7510	100.0	$1.6699	100.0	$0.0673	100.0	$0.0718	100.0	$0.0354	100.0
1890..................	.8933	118.9	2.0292	121.5	.0700	104.0	.0800	111.4	.0356	100.6
1891..................	.9618	128.1	2.2531	134.9	.0700	104.0	.0800	111.4	.0356	100.6
1892..................	.7876	104.9	1.8698	112.0	.0688	102.2	.0763	106.3	.0356	100.6
1893..................	.6770	90.1	1.9906	119.2	.0650	96.6	.0750	104.5	.0356	100.6
1894..................	.5587	74.4	1.8469	110.6	.0650	96.6	.0725	101.0	.0356	100.6
1895..................	.6000	79.9	1.7896	107.2	.0654	97.2	.0675	94.0	.0333	94.1
1896..................	.6413	85.4	1.1740	70.3	.0650	96.6	.0658	91.6	.0363	102.5
1897..................	.7949	105.8	1.0448	62.6	.0592	88.0	.0592	82.5	.0356	100.6
1898..................	.8849	117.8	1.2479	74.7	.0733	108.9	.0758	105.6	.0356	100.6
1899..................	.7109	94.7	1.4531	87.0	.0713	105.9	.0663	92.3	.0356	100.6
1900..................	.7040	93.7	2.0969	125.6	.0750	111.4	.0675	94.0	.0356	100.6
1901..................	.7187	95.7	2.1927	131.3	.0800	118.9	.0700	97.5	.0356	100.6
1902..................	.7414	98.7	1.9198	115.0	.0800	118.9	.0700	97.5	.0356	100.6
1903..................	.7895	105.1	2.2625	135.5	.0758	112.6	.0646	90.0	0356	100.6
1904..................	1.0390	138.3	2.0104	120.4	.0775	115.2	.0658	91.6	.0363	102.5
1905..................	1.0104	134.5	2.1500	128.8	.0892	132.5	.0683	95.1	.0356	100.6
1906..................	.7931	105.6	1.9000	113.8	.0900	133.7	.0650	90.5	.0356	100.6
1907..................	.9073	120.8	1.7771	106.4	.0900	133.7	.0650	90.5	.0356	100.6
1908..................	.9899	131.8	2.3198	138.9	[d] .0650	[d] 133.7	.0650	90.5	.0356	100.6

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[a] Sheep: wethers, good to fancy. For method of computing relative price, see pages 230 and 231; average price for 1907, $5.7461.

[b] Sheep: wethers, plain to choice. For method of computing relative price, see pages 230 and 231; average price for 1907, $5.4206.

[c] Weight before baking.

[d] Bread: crackers, oyster. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0650.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Food, etc.									
	Bread: loaf, homemade (N. Y. market).		Bread: loaf, Vienna (N. Y. market).		Butter: creamery, Elgin (Elgin market).		Butter: creamery, extra (N. Y. market).		Butter: dairy, New York State.	
	Average price per pound.[a]	Relative price.	Average price per pound.[a]	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$0.0317	100.0	$0.0352	100.0	$0.2170	100.0	$0.2242	100.0	$0.2024	100.0
1890	.0320	100.9	.0356	101.1	.2238	103.1	.2276	101.5	.1954	96.5
1891	.0320	100.9	.0356	101.1	.2501	115.3	.2586	115.3	.2380	117.6
1892	.0320	100.9	.0356	101.1	.2528	116.5	.2612	116.5	.2350	116.1
1893	.0320	100.9	.0356	101.1	.2581	118.9	.2701	120.5	.2521	124.6
1894	.0320	100.9	.0356	101.1	.2194	101.1	.2288	102.1	.2091	103.3
1895	.0320	100.9	.0356	101.1	.2064	95.1	.2137	95.3	.1882	93.0
1896	.0287	90.5	.0319	90.6	.1793	82.6	.1841	82.1	.1665	82.3
1897	.0320	100.9	.0356	101.1	.1837	84.7	.1895	84.5	.1684	83.2
1898	.0320	100.9	.0356	101.1	.1886	86.9	.1954	87.2	.1749	86.4
1899	.0320	100.9	.0356	101.1	.2075	95.6	.2126	94.8	.1965	97.1
1900	.0320	100.9	.0356	101.1	.2178	100.4	.2245	100.1	.2115	104.5
1901	.0320	100.9	.0356	101.1	.2114	97.4	.2163	96.5	.2007	99.2
1902	.0320	100.9	.0356	101.1	.2413	111.2	.2480	110.6	.2318	114.5
1903	.0320	100.9	.0356	101.1	.2302	106.1	.2348	104.7	.2150	106.2
1904	.0350	110.4	.0370	105.1	.2178	100.4	.2189	97.6	.1970	97.3
1905	.0376	118.6	.0400	113.6	.2429	111.9	.2489	111.0	.2339	115.6
1906	.0376	118.6	.0400	113.6	.2459	113.3	.2489	111.0	.2325	114.9
1907	.0376	118.6	.0400	113.6	.2761	127.2	.2830	126.2	.2671	132.0
1908	.0400	126.2	.0413	117.3	.2692	124.1	.2711	120.9	.2449	121.0

Year.	Cheese: N. Y., full cream.		Coffee: Rio No. 7.		Eggs: new-laid, fancy, near-by.		Fish: cod, dry, bank, large.		Fish: herring, shore, round.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per dozen.	Relative price.	Average price per quintal.	Relative price.	Average price per barrel.	Relative price.
Average, 1890-1899	$0.0987	100.0	$0.1313	100.0	$0.1963	100.0	$5.5849	100.0	$3.7763	100.0
1890	.0958	97.1	.1793	136.6	.1945	99.1	5.6771	101.7	3.5250	93.3
1891	.1011	102.4	.1671	127.3	.2160	110.0	6.7292	120.5	4.7068	124.6
1892	.1058	107.2	.1430	108.9	.2167	110.4	7.0521	126.3	2.9375	77.8
1893	.1076	109.0	.1723	131.2	.2247	114.5	6.3802	114.2	3.8125	101.0
1894	.1060	107.4	.1654	126.0	.1835	93.5	5.9583	106.7	3.3958	89.9
1895	.0929	94.1	.1592	121.2	.2002	102.0	5.5208	98.9	3.1563	83.6
1896	.0908	92.0	.1233	93.9	.1741	88.7	4.2083	75.4	3.3542	88.8
1897	.0968	98.1	.0793	60.4	.1718	87.5	4.5208	80.9	3.6354	96.3
1898	.0822	83.3	.0633	48.2	.1817	92.6	4.6667	83.6	4.2083	111.4
1899	.1075	108.9	.0604	46.0	.1994	101.6	5.1354	92.0	5.0313	133.2
1900	.1128	114.3	.0822	62.6	.1977	100.7	5.3021	94.9	5.0833	134.6
1901	.1011	102.4	.0646	49.2	.2095	106.7	5.9896	107.2	4.9792	131.9
1902	.1126	114.1	.0586	44.6	.2409	122.7	5.0938	91.2	4.9063	129.9
1903	.1217	123.3	.0559	42.6	.2418	123.2	5.8646	105.0	5.7292	151.7
1904	.1019	103.2	.0782	59.6	.2650	135.0	7.2813	130.4	5.4531	144.4
1905	.1212	122.8	.0832	63.4	.2712	138.2	7.3958	132.4	6.0000	158.9
1906	.1313	133.0	.0811	61.8	.2615	133.2	7.6042	136.2	6.3438	168.0
1907	.1414	143.3	.0658	50.1	.2771	141.2	7.7396	138.6	6.1500	162.9
1908	.1364	138.2	.0628	47.8	.2788	142.0	7.3021	130.7	[b] 7.0833	[b] 160.1

[a] Weight before baking.

[b] Fish: herring, Nova Scotia split. For method of computing relative price, see pages 230 and 231; average price for 1907, $7.2083.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Food, etc.									
	Fish: mackerel, salt, large No. 3s.		Fish: salmon, canned.		Flour: buckwheat.		Flour: rye.		Flour: wheat, spring patents.	
	Average price per barrel.	Relative price.	Average price per 12 cans.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per barrel.	Relative price.	Average price per barrel.	Relative price.
Average, 1890-1899	$14.1306	100.0	$1.4731	100.0	$1.9428	100.0	$3.3171	100.0	$4.2972	100.0
1890	18.2500	129.2	1.6417	111.4	2.0214	104.0	3.3646	101.4	5.1856	120.7
1891	15.3125	108.4	1.5000	101.8	2.4429	125.7	4.9208	148.3	5.3053	123.5
1892	13.0000	92.0	1.4833	100.7	1.7891	92.1	4.0167	121.1	4.3466	101.1
1893	13.0000	92.0	1.4938	101.4	2.3679	121.9	3.0854	93.0	4.0063	93.2
1894	11.0556	78.2	1.4250	96.7	2.4357	125.4	2.7813	83.8	3.5947	83.7
1895	15.6250	110.6	1.5042	102.1	1.6750	86.2	3.1333	94.5	3.6434	84.8
1896	13.9167	98.5	1.5500	105.2	1.3806	71.1	2.6833	80.9	3.7957	88.3
1897	12.2292	86.5	1.3375	90.8	1.4656	75.4	2.8063	84.6	4.5913	106.8
1898	13.6667	96.7	1.2667	86.0	1.5500	79.8	3.0813	92.9	4.7293	110.1
1899	15.2500	107.9	1.5292	103.8	2.3000	118.4	3.2979	99.4	3.7740	87.8
1900	13.8958	98.3	1.7708	120.2	2.1036	108.3	3.4250	103.3	3.8423	89.4
1901	10.8182	76.6	1.7125	116.3	2.1063	108.4	3.3208	100.1	3.8104	88.7
1902	13.7500	97.3	1.6146	109.6	2.2357	115.1	3.4417	103.8	3.8082	88.6
1903	17.4479	123.5	1.6208	110.0	2.3214	119.5	3.1479	94.9	4.3303	100.8
1904	14.5000	102.6	1.7250	117.1	2.3333	120.1	4.3479	131.1	5.3784	125.2
1905	13.9167	98.5	1.7042	115.7	2.1893	112.7	4.4667	134.7	5.4221	126.2
1906	14.7917	104.7	1.6833	114.3	2.2333	115.0	3.8438	115.9	4.2760	99.5
1907	13.9167	98.5	1.6679	113.2	2.5714	132.4	4.6021	138.7	4.8755	113.5
1908	11.3542	80.4	1.9208	130.4	3.0333	156.1	4.7375	142.8	5.4183	126.1

Year.	Flour: wheat, winter straignts.		Fruit: apples, evaporated, choice.		Fruit: apples, sun-dried.		Fruit: currants, in barrels.		Fruit: prunes, California, in boxes.	
	Average price per barrel.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$3.8450	100.0	$0.0847	100.0	$0.0515	100.0	$0.0375	100.0	$0.0774	100.0
1890	4.6524	121.0	.1136	134.1	.0690	134.0	.0478	127.5	.1068	138.0
1891	4.9048	127.6	.1100	129.9	.0825	160.2	.0426	113.6	.1000	129.2
1892	4.1216	107.2	.0688	81.2	.0423	82.1	.0297	79.2	.0995	128.6
1893	3.2832	85.4	.0927	109.4	.0508	98.6	.0270	72.0	.1039	134.2
1894	2.7495	71.5	.1092	128.9	.0631	122.5	.0173	46.1	.0735	95.0
1895	3.2311	84.0	.0678	80.0	.0481	93.4	.0254	67.7	.0666	86.0
1896	3.6197	94.1	.0533	62.9	.0312	60.6	.0327	87.2	.0581	75.1
1897	4.3606	113.4	.0555	65.5	.0267	51.8	.0479	127.7	.0546	70.5
1898	4.1452	107.8	.0890	105.1	.0398	77.3	.0580	154.7	.0544	70.3
1899	3.3822	88.0	.0869	102.6	.0610	118.4	.0470	125.3	.0565	73.0
1900	3.3490	87.1	.0615	72.6	.0443	86.0	.0720	192.0	.0522	67.4
1901	3.3085	86.0	.0709	83.7	.0410	79.6	.0831	221.6	.0525	67.8
1902	3.4885	90.7	.0921	108.7	.0507	98.4	.0494	131.7	.0551	71.2
1903	3.5923	93.4	.0611	72.1	.0432	83.9	.0476	126.9	.0481	62.1
1904	4.8264	125.5	.0603	71.2	.0333	64.7	.0488	130.1	.0461	59.6
1905	4.5428	118.1	.0699	82.5	.0348	67.6	.0490	130.7	.0459	59.3
1906	3.6149	94.0	.0978	115.5	.0532	103.3	.0614	163.7	.0646	83.5
1907	3.9877	103.7	.0843	99.5	.0638	123.9	.0703	187.5	.0593	76.6
1908	4.2909	111.6	.0863	101.9	(a)	......	.0609	162.4	.0598	77.3

[a] Quotations discontinued.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Food, etc.									
	Fruit: raisins, California, London layer.		Glucose.		Lard: prime contract.		Meal: corn, fine white.		Meal: corn, fine yellow.	
	Average price per box.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per pound.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per 100 lbs.	Relative price.
Average, 1890-1899	$1.5006	100.0	[a]$1.4182	100.0	$0.0654	100.0	$1.0486	100.0	$1.0169	100.0
1890	2.3604	157.3			.0633	96.8	1.0613	101.2	1.0200	100.3
1891	1.8021	120.1			.0660	100.9	1.4746	140.6	1.4579	143.4
1892	1.4688	97.9			.0771	117.9	1.1921	113.7	1.1608	114.2
1893	1.7000	113.3	1.7625	124.3	.1030	157.5	1.1013	105.0	1.0833	106.5
1894	1.1542	76.9	1.5802	111.4	.0773	118.2	1.1188	106.7	1.0629	104.5
1895	1.4292	95.2	1.5492	109.2	.0653	99.8	1.0721	102.2	1.0613	104.4
1896	1.0188	67.9	1.1585	81.7	.0469	71.7	.8129	77.5	.7854	77.2
1897	1.3979	93.2	1.2190	86.0	.0441	67.4	.8158	77.8	.7633	75.1
1898	1.3917	92.7	1.3021	91.8	.0552	84.4	.8821	84.1	.8463	83.2
1899	1.2833	85.5	1.3558	95.6	.0556	85.0	.9554	91.1	.9273	91.2
1900	1.5208	101.3	1.4875	104.9	.0690	105.5	1.0115	96.5	.9908	97.4
1901	1.4417	96.1	1.6458	116.0	.0885	135.3	1.1979	114.2	1.1875	116.8
1902	1.6854	112.3	2.1788	153.6	.1059	161.9	1.5354	146.4	1.5250	150.0
1903	1.4458	96.3	1.8396	129.7	.0877	134.1	1.2967	123.7	1.2783	125.7
1904	1.4729	98.2	1.7917	126.3	.0731	111.8	1.3396	127.8	1.3333	131.1
1905	1.1875	79.1	1.7742	125.1	.0745	113.9	1.3250	126.4	1.3250	130.3
1906	1.6000	106.6	2.0267	142.9	.0887	135.6	1.2667	120.8	1.2625	124.2
1907	1.6271	108.4	2.2608	159.4	.0920	140.7	1.3575	129.5	1.3575	133.5
1908	1.8100	120.6	2.6400	186.2	.0908	138.8	1.6146	154.0	1.6146	158.8

Year.	Meat: bacon, short clear sides.		Meat: bacon, short rib sides.		Meat: beef, fresh, native sides.		Meat: beef, salt, extra mess.		Meat: beef, salt, hams, western.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per barrel.	Relative price.	Average price per barrel.	Relative price.
Average, 1890-1899	$0.0675	100.0	$0.0656	100.0	$0.0771	100.0	$8.0166	100.0	$18.0912	100.0
1890	.0603	89.3	.0586	89.3	.0688	89.2	6.9596	86.8	14.5409	80.4
1891	.0699	103.6	.0681	103.8	.0819	106.2	8.3654	104.4	15.5144	85.8
1892	.0787	116.6	.0764	116.5	.0762	98.8	6.7966	84.8	14.5577	80.5
1893	.1048	155.3	.1010	154.0	.0813	105.4	8.1938	102.2	17.8317	98.6
1894	.0751	111.3	.0736	112.2	.0748	97.0	8.0933	101.0	18.3558	101.5
1895	.0650	96.3	.0632	96.3	.0792	102.7	8.1274	101.4	17.3443	95.9
1896	.0494	73.2	.0479	73.0	.0698	90.5	7.5096	93.7	15.9327	88.1
1897	.0541	80.1	.0522	79.6	.0769	99.7	7.6755	95.7	22.6250	125.1
1898	.0596	88.3	.0594	90.5	.0781	101.3	9.1563	114.2	21.4880	118.8
1899	.0583	86.4	.0558	85.1	.0835	108.3	9.2885	115.9	22.7212	125.6
1900	.0752	111.4	.0732	111.6	.0804	104.3	9.7538	121.7	20.6587	114.2
1901	.0891	132.0	.0869	132.5	.0787	102.1	9.3204	116.3	20.3774	112.6
1902	.1073	159.0	.1046	159.5	.0971	125.9	11.7885	147.1	21.3413	118.0
1903	.0959	142.1	.0938	143.0	.0784	101.7	9.0673	113.1	21.2115	117.2
1904	.0775	114.8	.0757	115.4	.0818	106.1	8.7689	109.4	22.3341	123.5
1905	.0800	118.5	.0783	119.4	.0802	104.0	10.0240	125.0	21.9952	121.6
1906	.0942	139.6	.0920	140.2	.0780	101.2	8.8462	110.3	21.5625	119.2
1907	.0954	141.3	.0919	140.1	.0884	114.7	9.8173	122.5	26.0519	144.0
1908	.0901	133.5	.0870	132.6	.0934	121.1	13.1837	164.5	27.7115	153.2

[a] Average for 1893-1899.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Food, etc.									
	Meat: hams, smoked.		Meat: mutton, dressed.		Meat: pork, salt, mess.		Milk: fresh.		Molasses: N. O., open kettle.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per barrel.	Relative price.	Average price per quart.	Relative price.	Average price per gallon.	Relative price.
Average, 1890-1899	$0.0984	100.0	$0.0754	100.0	$11.6332	100.0	$0.0255	100.0	$0.3151	100.0
1890	.0995	101.1	.0933	123.7	12.1502	104.4	.0263	103.1	.3542	112.4
1891	.0982	99.8	.0866	114.9	11.3029	97.2	.0267	104.7	.2788	88.5
1892	.1076	109.3	.0914	121.2	11.5252	99.1	.0268	105.1	.3188	101.2
1893	.1249	126.9	.0803	106.5	18.3389	157.6	.0279	109.4	.3346	106.2
1894	.1019	103.6	.0605	80.2	14.1262	121.4	.0263	103.1	.3092	98.1
1895	.0947	96.2	.0620	82.2	11.8255	101.7	.0253	99.2	.3083	97.8
1896	.0943	95.8	.0625	82.9	8.9399	76.8	.0234	91.8	.3246	103.0
1897	.0894	90.9	.0728	96.6	8.9087	76.6	.0235	92.2	.2617	83.1
1898	.0807	82.0	.0739	98.0	9.8678	84.8	.0239	93.7	.3083	97.8
1899	.0923	93.8	.0711	94.3	9.3462	80.3	.0253	99.2	.3525	111.9
1900	.1025	104.2	.0727	96.4	12.5072	107.5	.0274	107.5	.4775	151.5
1901	.1075	109.2	.0675	89.5	15.6108	134.2	.0262	102.7	.3783	120.1
1902	.1211	123.1	.0738	97.9	17.9399	154.2	.0288	112.9	.3638	115.5
1903	.1271	129.2	.0744	98.7	16.6514	143.1	.0288	112.9	.3546	112.5
1904	.1072	108.9	.0778	103.2	14.0288	120.6	.0275	107.8	.3396	107.8
1905	.1046	106.3	.0859	113.9	14.4183	123.9	.0289	113.3	.3229	102.5
1906	.1235	125.5	.0910	120.7	17.5120	150.5	.0301	118.0	.3400	107.9
1907	.1303	132.4	.0875	116.0	17.5684	151.0	.0335	131.4	.4088	129.7
1908	.1125	114.3	.0863	114.5	15.9736	137.3	.0329	129.0	.3550	112.7

Year.	Rice: domestic, choice.		Salt: American.		Salt: Ashton's.		Soda: bicarbonate of, American.		Spices: nutmegs.	
	Average price per pound.	Relative price.	Average price per barrel.	Relative price.	Average price per 224-lb. bag.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$0.0561	100.0	$0.7044	100.0	$2.2033	100.0	$0.0209	100.0	$0.4322	100.0
1890	.0605	107.8	.7921	112.5	2.4646	111.9	.0275	131.6	.6317	146.2
1891	.0637	113.5	.7865	111.7	2.3813	108.1	.0317	151.7	.6081	140.7
1892	.0569	101.4	.7575	107.5	2.3750	107.8	.0218	104.3	.5319	123.1
1893	.0459	81.8	.7019	99.6	2.3250	105.5	.0285	136.4	.4584	106.1
1894	.0526	93.8	.7192	102.1	2.2375	101.6	.0268	128.2	.3996	92.5
1895	.0533	95.0	.7019	99.6	2.0500	93.0	.0177	84.7	.3969	91.8
1896	.0519	92.5	.6226	88.4	2.0500	93.0	.0152	72.7	.3590	83.1
1897	.0542	96.6	.6613	93.9	2.0500	93.0	.0150	71.8	.3354	77.6
1898	.0608	108.4	.6648	94.4	2.0500	93.0	.0129	61.7	.3140	72.7
1899	.0607	108.2	.6365	90.4	2.0500	93.0	.0117	56.0	.2871	66.4
1900	.0548	97.7	1.0010	142.1	2.0500	93.0	.0123	58.9	.2601	60.2
1901	.0548	97.7	.8567	121.6	2.1813	99.0	.0107	51.2	.2346	54.3
1902	.0559	99.6	.6360	90.3	2.2250	101.0	.0108	51.7	.2028	46.9
1903	.0566	100.9	.6140	87.2	2.2479	102.0	.0129	61.7	.2877	66.6
1904	.0441	78.6	.7704	109.4	(a)	....	.0130	62.2	.2175	50.3
1905	.0417	74.3	.7552	107.2	(a)	....	.0130	62.2	.1722	39.8
1906	.0474	84.5	.7144	101.4	(a)	....	.0130	62.2	.1730	40.0
1907	.0534	95.2	.7931	112.6	(a)	....	.0130	62.2	.1397	32.3
1908	.0624	111.2	.7854	111.5	(a)	....	.0110	52.6	(a)	....

[a] Quotations discontinued.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Food, etc.									
	Spices: pepper, Singapore.		Starch: pure corn.		Sugar: 89° fair refining.		Sugar: 96° centrifugal.		Sugar: granulated.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899..	$0.0749	100.0	$0.0548	100.0	$0.03398	100.0	$0.03869	100.0	$0.04727	100.0
1890	.1151	153.7	.0546	99.6	.04890	143.9	.05460	141.1	.06168	130.5
1891	.0873	116.6	.0600	109.5	.03459	101.8	.03910	101.1	.04714	99.7
1892	.0689	92.0	.0600	109.5	.02873	84.5	.03315	85.7	.04354	92.1
1893	.0595	79.4	.0600	109.5	.03208	94.3	.03680	95.1	.04836	102.3
1894	.0516	68.9	.0567	103.5	.02759	81.2	.03229	83.5	.04111	87.0
1895	.0497	66.4	.0554	101.1	.02894	85.2	.03253	84.1	.04155	87.9
1896	.0500	66.8	.0513	93.6	.03192	93.9	.03624	93.7	.04532	95.9
1897	.0664	88.7	.0500	91.2	.03077	90.6	.03564	92.1	.04497	95.1
1898	.0891	119.0	.0500	91.2	.03712	109.2	.04235	109.5	.04974	105.2
1899	.1117	149.1	.0500	91.2	.03922	115.4	.04422	114.3	.04924	104.2
1900	.1291	172.4	.0500	91.2	.04051	119.2	.04572	118.2	.05332	112.8
1901	.1292	172.5	.0470	85.8	.03521	103.6	.04040	104.4	.05048	106.8
1902	.1255	167.6	.0440	80.3	.03035	89.3	.03542	91.5	.04455	94.2
1903	.1289	172.1	.0507	92.5	.03228	95.0	.03720	96.1	.04641	98.2
1904	.1229	164.1	.0525	95.8	.03470	102.1	.03974	102.7	.04772	101.0
1905	.1217	162.5	.0552	100.7	.03696	108.8	.04278	110.6	.05256	111.2
1906	.1138	151.9	.0577	105.3	.03183	93.7	.03686	95.3	.04515	95.5
1907	.0994	132.7	.0600	109.5	.03251	95.7	.03754	97.0	.04651	98.4
1908	.0715	95.5	.0575	104.9	.03563	104.9	.04064	105.0	.04940	104.5

Year.	Tallow.		Tea: Formosa, fine.		Vegetables, fresh: onions.		Vegetables, fresh: potatoes, white.		Vinegar: cider, Monarch.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per barrel.	Relative price.	Average price per bushel.	Relative price.	Average price per gallon.	Relative price.
Average, 1890-1899..	$0.0435	100.0	$0.2839	100.0	$3.3995	100.0	$0.4991	100.0	$0.1478	100.0
1890	.0460	105.7	.2733	96.3	4.3438	127.8	.5956	119.3	.1558	105.4
1891	.0483	111.0	.2817	99.2	4.1250	121.3	.7730	154.9	.1800	121.8
1892	.0463	106.4	.3008	106.0	3.6042	106.0	.4546	91.1	.1642	111.1
1893	.0544	125.1	.2888	101.7	3.1875	93.8	.6714	134.5	.1500	101.5
1894	.0480	110.3	.2783	98.0	3.2500	95.6	.6128	122.8	.1500	101.5
1895	.0434	99.8	.2700	95.1	3.1146	91.6	.4326	86.7	.1450	98.1
1896	.0343	78.9	.2583	91.0	1.9479	57.3	.1965	39.4	.1300	88.0
1897	.0332	76.3	.2800	98.6	3.9271	115.5	.3279	65.7	.1300	88.0
1898	.0356	81.8	.2958	104.2	3.2708	96.2	.5094	102.1	.1325	89.6
1899	.0453	104.1	.3117	109.8	3.2238	94.8	.4172	83.6	.1400	94.7
1900	.0485	111.5	.2977	104.9	2.4271	71.4	.3736	74.9	.1350	91.3
1901	.0518	119.1	.2850	100.4	3.5000	103.0	.5642	113.0	.1325	89.6
1902	.0629	144.6	.3015	106.2	3.6458	107.2	.5958	119.4	.1408	95.3
1903	.0510	117.2	.2296	80.9	3.5675	104.9	.5249	105.2	.1300	88.0
1904	.0459	105.5	.2758	97.1	3.5568	104.6	.7301	146.3	.1325	89.6
1905	.0449	103.2	.2675	94.2	3.2392	95.3	.4026	80.7	.1458	98.6
1906	.0529	119.3	.2350	82.8	3.2917	96.8	.5476	109.7	.1700	115.0
1907	.0621	142.8	.2300	81.0	3.5000	103.0	.4912	98.4	.1725	116.7
1908	.0551	126.7	.2133	75.1	3.5357	104.0	.7119	142.6	.1842	124.6

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Bags: 2-bushel, Amoskeag.		Blankets: 11-4, 5 pounds to the pair, all wool.		Blankets: 11-4, 5 pounds to the pair, cotton warp, all wool filling.		Blankets: 11-4, 5 pounds to the pair, cotton warp, cotton and wool filling.		Boots and shoes: men's brogans, split.	
	Average price per bag.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pair.	Relative price.
Average, 1890-1899	$0.1399	100.0	$0.840	100.0	$0.613	100.0	$0.424	100.0	$0.9894	100.0
1890	.1594	113.9	.910	108.3	.650	106.0	.460	108.5	1.0500	106.1
1891	.1563	111.7	.890	106.0	.650	106.0	.460	108.5	1.0500	106.1
1892	.1550	110.8	.900	107.1	.640	104.4	.430	101.4	1.0375	104.9
1893	.1494	106.8	.900	107.1	.640	104.4	.420	99.1	1.0125	102.3
1894	.1275	91.1	.850	101.2	.550	89.7	.410	96.7	.9688	97.9
1895	.1150	82.2	.750	89.3	.540	88.1	.400	94.3	.9813	99.2
1896	.1281	91.6	.750	89.3	.560	91.4	.400	94.3	.9938	100.4
1897	.1300	92.9	.750	89.3	.650	106.0	.420	99.1	.9500	96.0
1898	.1338	95.6	.900	107.1	.625	102.0	.420	99.1	.9125	92.2
1899	.1446	103.4	.800	95.2	.625	102.0	.420	99.1	.9375	94.8
1900	.1575	112.6	.900	107.1	.750	122.3	.525	123.8	.9375	94.8
1901	.1413	101.0	.850	101.2	.650	106.0	.475	112.0	.9438	95.4
1902	.1433	102.4	.850	101.2	.650	106.0	.475	112.0	.9313	94.1
1903	.1458	104.2	.925	110.1	.700	114.2	.500	117.9	.9250	93.5
1904	.1796	128.4	.925	110.1	.725	118.3	.525	123.8	.9250	93.5
1905	.1533	109.6	1.000	119.0	.775	126.4	.600	141.5	1.0042	101.5
1906	.1806	129.1	1.025	122.0	.800	130.5	.600	141.5	1.2542	126.8
1907	.1938	138.5	1.000	119.0	.800	130.5	.600	141.5	1.2729	128.7
1908	.1879	134.3	.950	113.1	(a)	....	[b].504	[b]136.1	1.1354	114.8

Year.	Boots and shoes: men's calf bal. shoes, Goodyear welt.		Boots and shoes: men's split boots.		Boots and shoes: men's vici kid shoes, Goodyear welt.		Boots and shoes: women's solid grain shoes.		Broadcloths: first quality, black, 54-inch, XXX wool.	
	Average price per pair.	Relative price.	Average price per 12 pairs.	Relative price.	Average price per pair.	Relative price.	Average price per pair.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$2.376	100.0	$16.350	100.0	$2.3000	100.0	$0.8175	100.0	$1.732	100.0
1890	2.400	101.0	17.000	104.0	2.5000	108.7	.8500	104.0	1.970	113.7
1891	2.400	101.0	17.000	104.0	2.5000	108.7	.8000	97.9	1.970	113.7
1892	2.400	101.0	17.000	104.0	2.5000	108.7	.7750	94.8	1.970	113.7
1893	2.400	101.0	16.500	100.9	2.5000	108.7	.7500	91.7	1.970	113.7
1894	2.400	101.0	16.000	97.9	2.5000	108.7	.7500	91.7	1.580	91.2
1895	2.400	101.0	15.000	91.7	2.2500	97.8	.8500	104.0	1.380	79.7
1896	2.400	101.0	15.500	94.8	2.2500	97.8	.8500	104.0	1.380	79.7
1897	2.400	101.0	16.000	97.9	2.0000	87.0	.8500	104.0	1.700	98.2
1898	2.320	97.6	16.500	100.9	2.0000	87.0	.8500	104.0	1.700	98.2
1899	2.240	94.3	17.000	104.0	2.0000	87.0	.8500	104.0	1.700	98.2
1900	2.240	94.3	18.000	110.1	2.0000	87.0	.9042	110.6	1.870	108.0
1901	2.300	96.8	18.375	112.4	2.0000	87.0	.8542	104.5	1.910	110.3
1902	2.300	96.8	18.167	111.1	2.0000	87.0	.8625	105.5	1.910	110.3
1903	2.350	98.9	18.500	113.1	2.0000	87.0	.8875	108.6	1.910	110.3
1904	2.350	98.9	18.583	113.7	2.0083	87.3	.9183	112.3	1.914	110.5
1905	2.375	100.0	19.708	120.5	2.1958	95.5	.9771	119.5	1.995	115.2
1906	[c]2.775	[c]108.0	23.667	144.8	2.3792	103.4	1.0313	126.2	2.020	116.6
1907	[c]2.800	[c]109.0	26.167	160.0	2.5000	108.7	1.0063	123.1	2.020	116.6
1908	[c]2.800	[c]109.0	(a)	....	2.5000	108.7	.9688	118.5	2.003	115.6

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[a] Quotations discontinued.

[b] Blankets: 10-4, 2 lbs. to the pair, 54 x 74, all cotton. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.524.

[c] Men's vici calf shoes: Blucher bal., vici calf top, single sole. For method of computing relative price, see pages 230 and 231; average price for 1905, $2.57.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Calico: Cocheco prints.		Carpets: Brussels, 5-frame, Bigelow.		Carpets: Ingrain, 2-ply, Lowell.		Carpets: Wilton, 5-frame, Bigelow.		Cotton flannels: 2¾ yards to the pound.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899..	$0.0553	100.0	$1.0008	100.0	$0.4752	100.0	$1.8432	100.0	$0.0706	100.0
1890	.0650	117.5	1.0320	103.1	.5160	108.6	1.9200	104.2	.0875	123.9
1891	.0575	104.0	1.1280	112.7	.5520	116.2	2.0160	109.4	.0875	123.9
1892	.0650	117.5	1.0320	103.1	.5040	106.1	1.9200	104.2	.0838	118.7
1893	.0625	113.0	.9840	98.3	.5280	111.1	1.9200	104.2	.0725	102.7
1894	.0550	99.5	.9360	93.5	.4680	98.5	1.9200	104.2	.0675	95.6
1895	.0525	94.9	.9360	93.5	.4200	88.4	1.6800	91.1	.0650	92.1
1896	.0525	94.9	.9360	93.5	.4080	85.9	1.6800	91.1	.0650	92.1
1897	.0500	90.4	.9600	95.9	.4320	90.9	1.7280	93.8	.0575	81.4
1898	.0450	81.4	1.0320	103.1	.4680	98.5	1.8240	99.0	.0575	81.4
1899	.0483	87.3	1.0320	103.1	.4560	96.0	1.8240	99.0	.0619	87.7
1900	.0525	94.9	1.0320	103.1	.4920	103.5	1.8720	101.6	.0738	104.5
1901	.0500	90.4	1.0320	103.1	.4800	101.0	1.8720	101.6	.0640	90.7
1902	.0500	90.4	1.0360	103.5	.4840	101.9	1.8840	102.2	.0650	92.1
1903	.0504	91.1	1.0880	108.7	.5136	108.1	2.0080	108.9	.0735	104.1
1904	.0529	95.7	1.1040	110.3	.5184	109.1	2.0400	110.7	.0885	125.4
1905	.0517	93.5	1.1520	115.1	.5520	116.2	2.1360	115.9	.0854	121.0
1906	.0550	99.5	1.1800	117.9	.5520	116.2	2.1920	118.9	.0923	130.7
1907	[a].0602	[a]121.0	1.2480	124.7	.5760	121.2	2.2800	123.7	.0988	139.9
1908	[a].0519	[a]104.3	1.2000	119.9	.5540	116.6	2.2160	120.2	.0829	117.4

Year.	Cotton flannels: 3½ yards to the pound.		Cotton thread: 6-cord, 200-yard spools, J. & P. Coats.		Cotton yarns: carded, white, mule-spun, northern, cones, 10/1.		Cotton yarns: carded, white, mule-spun, northern, cones, 22/1.		Denims: Amoskeag.	
	Average price per yard.	Relative price.	Average price per spool.([b])	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899..	$0.0575	100.0	$.031008	100.0	$0.1608	100.0	$0.1969	100.0	$0.1044	100.0
1890	.0688	119.7	.031514	101.6	[c].1790	111.3	[c].2208	112.1	.1175	112.5
1891	.0688	119.7	.031238	100.7	[c].1794	111.6	[c].2244	114.0	.1144	109.6
1892	.0650	113.0	.031238	100.7	[c].1885	117.2	[c].2300	116.8	.1144	109.6
1893	.0575	100.0	.031238	100.7	.1808	112.4	.2138	108.6	.1175	112.5
1894	.0550	95.7	.031238	100.7	.1523	94.7	.1796	91.2	.1100	105.4
1895	.0525	91.3	.031238	100.7	.1477	91.9	.1815	92.2	.0988	94.6
1896	.0550	95.7	.030871	99.6	.1483	92.2	.1844	93.7	.0988	94.6
1897	.0550	95.7	.030503	98.4	.1452	90.3	.1788	90.8	.0931	89.2
1898	.0463	80.5	.030503	98.4	.1456	90.5	.1792	91.0	.0897	85.9
1899	.0508	88.3	.030503	98.4	.1408	87.6	.1760	89.4	.0896	85.8
1900	.0567	98.6	.037240	120.1	.1850	115.0	.2283	115.9	.1073	102.8
1901	.0575	100.0	.037240	120.1	.1585	98.6	.1927	97.9	.1046	100.2
1902	.0575	100.0	.037240	120.1	.1538	95.6	.1819	92.4	.1050	100.6
1903	.0629	109.4	.037240	120.1	.1869	116.2	.2156	109.5	.1127	108.0
1904	.0723	125.7	.037240	120.1	.1981	123.2	.2279	115.7	.1217	116.6
1905	.0681	118.4	.037240	120.1	.1733	107.8	.2038	103.5	.1083	103.7
1906	.0723	125.7	.037240	120.1	.2004	124.6	.2304	117.0	.1233	118.1
1907	.0800	139.1	.041813	134.8	.2204	137.1	.2571	130.6	.1381	132.3
1908	.0696	121.0	.040833	131.7	.1777	110.5	.2104	106.9	.1160	111.1

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[a] Calico: American standard prints, 64 x 64. For method of computing relative price, see pages 230 and 231; average price for 1906, $0.0495.

[b] Freight paid.

[c] Records destroyed. Price estimated by person who furnished data for later years.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Drillings: brown, Pepperell.		Drillings: 30-inch, Stark A.		Flannels: white, 4-4, Ballard Vale No. 3.		Ginghams: Amoskeag.		Ginghams: Lancaster.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$0.0572	100.0	$0.0521	100.0	$0.3768	100.0	$0.0533	100.0	$0.0573	100.0
1890	.0683	119.4	.0640	122.8	.4400	116.8	.0625	117.3	.0692	120.8
1891	.0652	114.0	.0600	115.2	.4400	116.8	.0650	122.0	.0700	122.2
1892	.0582	101.7	.0535	102.7	.4367	115.9	.0650	122.0	.0700	122.2
1893	.0590	103.1	.0563	108.1	.4125	109.5	.0631	118.4	.0638	111.3
1894	.0559	97.7	.0502	96.4	.3546	94.1	.0485	91.0	.0504	88.0
1895	.0529	92.5	.0489	93.9	.3080	81.7	.0466	87.4	.0496	86.6
1896	.0573	100.2	.0522	100.2	.3217	85.4	.0472	88.6	.0500	87.3
1897	.0525	91.8	.0463	88.9	.3113	82.6	.0438	82.2	.0494	86.2
1898	.0513	89.7	.0437	83.9	.3685	97.8	.0431	80.9	.0488	85.2
1899	.0510	89.2	.0457	87.7	.3750	99.5	.0477	89.5	.0515	89.9
1900	.0606	105.9	.0542	104.0	.4096	108.7	.0515	96.6	.0550	96.0
1901	.0585	102.3	.0532	102.1	.3800	100.8	.0490	91.9	.0531	92.7
1902	.0575	100.5	.0539	103.5	.3986	105.8	.0523	98.1	.0575	100.3
1903	.0619	108.2	.0581	111.5	.4306	114.3	.0550	103.2	.0575	100.3
1904	.0727	127.1	.0658	126.3	.4433	117.6	.0548	102.8	.0556	97.0
1905	.0721	126.0	.0633	121.5	.4461	118.4	.0515	96.6	.0517	90.2
1906	.0775	135.5	.0740	142.0	.4613	122.4	.0565	106.0	.0592	103.3
1907	.0825	144.2	.0782	150.1	.4638	123.1	.0658	123.5	.0690	120.4
1908	.0706	123.4	.0718	137.8	.4611	122.4	.0548	102.8	.0573	100.0

Year.	Horse blankets: 6 pounds each, all wool.		Hosiery: men's cotton half hose, 20 to 22 oz.[a]		Hosiery: men's cotton half hose, 84 needles.		Hosiery: women's combed Egyptian cotton.		Hosiery: women's cotton hose, 26 to 28 oz.	
	Average price per pound.	Relative price.	Average price per 12 pairs.	Relative price.	Average price per 12 pairs.	Relative price.	Average price per 12 pairs.	Relative price.	Average price per 12 pairs.	Relative price.
Average, 1890-1899	$0.573	100.0	$0.9555	100.0	$0.7845	100.0	[b] $1.850	100.0	$0.9310	100.0
1890	.625	109.1	[c] 1.2740	133.3	[d] .9750	124.3	....	....	[c] 1.2250	131.6
1891	.600	104.7	[c] 1.1760	123.1	[d] .9750	124.3	....	....	[c] 1.1270	121.1
1892	.625	109.1	[c] 1.0780	112.8	[d] .9700	123.6	....	....	[c] 1.0780	115.8
1893	.600	104.7	[c] 1.0535	110.3	[d] .8750	111.5	1.900	102.7	[c] 1.0535	113.2
1894	.550	96.0	[c] .9800	102.6	[d] .7250	92.4	1.900	102.7	[c] .9800	105.3
1895	.530	92.5	[c] .9065	94.9	[d] .7000	89.2	1.875	101.4	[c] .8575	92.1
1896	.520	90.8	[c] .8330	87.2	[d] .7000	89.2	1.875	101.4	[c] .7840	84.2
1897	.570	99.5	[c] .7840	82.1	[d] .6500	82.9	1.850	100.0	[c] .7595	81.6
1898	.570	99.5	[c] .7350	76.9	[d] .6500	82.9	1.800	97.3	[c] .7105	76.3
1899	.540	94.2	[c] .7350	76.9	[d] .6250	79.7	1.750	94.6	[c] .7350	78.9
1900	.680	118.7	[c] .7840	82.1	[d] .6500	82.9	1.900	102.7	[c] .7595	81.6
1901	.630	109.9	[c] .6860	71.8	[d] .7250	82.4	2.000	108.1	[c] .6615	71.1
1902	.630	109.9	[c] .7350	76.9	.6667	85.0	1.850	100.0	[c] .7350	78.9
1903	.675	117.8	[c] .7840	82.1	.7063	90.0	1.875	101.4	[c] .8085	86.8
1904	.700	122.2	[c] .6370	82.1	.7525	95.9	1.800	97.3	[c] .7595	81.6
1905	.750	130.9	[c] .6370	82.1	.7009	89.2	1.750	94.6	[c] .7840	84.2
1906	.775	135.3	[c] .6615	85.3	.7000	89.2	1.900	102.7	[c] .7595	81.6
1907	.750	130.9	[c] .7350	94.8	.7500	95.6	2.025	109.5	[c] .8330	89.5
1908	.725	126.5	[e] .7500	[e] 88.9	(f)	....	[g] 1.775	[g] 95.9	[h] .8000	[h] 84.2

[a] The price for 1890-1903 is for two-thread goods. Prices, 1904 to 1908, are for single-thread goods. For method of computing relative price, see pages 230 and 231. Price of single-thread goods, $0.6370 in September, 1903.

[b] Average for 1893-1899.

[c] September price.

[d] January price.

[e] Hosiery: men's cotton half hose, seamless, 20 to 22 ounce, 160 needles, carded yarn. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.80.

[f] Quotations discontinued.

[g] Combed peeler yarn.

[h] Hosiery: women's cotton hose, seamless, fast black, 26 ounce, 176 needles, carded yarn. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.85.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Leather: harness, oak, country middles.		Leather: sole, hemlock.		Leather: sole, oak.		Leather: wax calf, 30 to 40 lbs. to the dozen.		Linen shoe thread: 10s, Barbour.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per sq. foot.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$0.2590	100.0	$0.1939	100.0	$0.3363	100.0	$0.6545	100.0	$0.8748	100.0
1890	.2571	99.3	.1921	99.1	.3771	112.1	.6000	91.7	.8910	101.9
1891	.2579	99.6	.1858	95.8	.3679	109.4	.6469	98.8	.8910	101.9
1892	.2367	91.4	.1727	89.1	.3421	101.7	.6929	105.9	.8910	101.9
1893	.2400	92.7	.1796	92.6	.3483	103.6	.6450	98.5	.8993	102.8
1894	.2275	87.8	.1715	88.4	.3279	97.5	.6042	92.3	.9182	105.0
1895	.2888	111.5	.2073	106.9	.3421	101.7	.7333	112.0	.8514	97.3
1896	.2554	98.6	.1881	97.0	.2925	87.0	.6433	98.3	.8514	97.3
1897	.2433	93.9	.2033	104.8	.3079	91.6	.6156	94.1	.8514	97.3
1898	.2825	109.1	.2129	109.8	.3213	95.5	.6760	103.3	.8514	97.3
1899	.3004	116.0	.2254	116.2	.3358	99.9	.6875	105.0	.8514	97.3
1900	.3025	116.8	.2490	128.4	.3608	107.3	.6563	100.3	.8877	101.5
1901	.2971	114.7	.2475	127.6	.3525	104.8	.6281	96.0	.8910	101.9
1902	[a].3325	[a]114.7	.2367	122.1	.3800	113.0	.6604	100.9	.8910	101.9
1903	[a].3313	[a]114.3	.2267	116.9	.3742	111.3	.6900	105.4	.8460	96.7
1904	[a].3188	[a]110.0	.2258	116.5	.3450	102.6	.6875	105.0	.8499	97.2
1905	[a].3333	[a]115.0	.2290	118.1	.3663	108.9	.6969	106.5	.8499	97.2
1906	[a].3713	[a]128.1	.2538	130.9	.3796	112.9	.7167	109.5	.8930	102.1
1907	[a].3738	[a]129.0	.2644	136.4	.3821	113.6	.7667	117.1	.8930	102.1
1908	[a].3508	[a]121.1	.2508	129.3	.3800	113.0	[b].2183	[b]113.6	.8930	102.1

Year.	Linen thread: 3-cord, 200-yard spools, Barbour.		Overcoatings: beaver, Moscow, all wool.		Overcoatings: chinchilla, all wool.		Overcoatings: chinchilla, cotton warp.		Overcoatings: covert cloth, light weight.	
	Average price per 12 spools.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$0.8522	100.0	$2.0817	100.0	$2.1419	100.0	$0.4883	100.0	$2.3286	100.0
1890	.8910	104.6	[c]2.4296	116.7	[c]2.4296	113.4	.5325	109.1	2.4616	105.7
1891	.7945	93.2	[c]2.4296	116.7	[c]2.4296	113.4	.5258	107.7	2.4616	105 7
1892	.8019	94.1	[c]2.4296	116.7	[c]2.4296	113.4	.5329	109.1	2.4616	105.7
1893	.8308	97.5	2.3250	111.7	2.3250	108.5	.5367	109.9	2.4616	105.7
1894	.8514	99.9	1.9879	95.5	1.9879	92.8	.4733	96.9	2.4254	104.2
1895	.8514	99.9	1.7670	84.9	1.8774	87.7	.4508	92.3	2.3259	99.9
1896	.8514	99.9	1.7670	84.9	1.8774	87.7	.4354	89.2	2.0363	87.4
1897	.8679	101.8	1.7670	84.9	1.8774	87.7	.4575	93.7	1.9458	83.6
1898	.8910	104.6	1.8600	89.4	2.0925	97.7	.4800	98.3	2.2625	97.2
1899	.8910	104.6	2.0538	98.7	2.0925	97.7	.4583	93.9	2.4435	104.9
1900	.8910	104.6	2.4994	120.1	2.4994	116.7	.4892	100.2	2.3621	101.4
1901	.8910	104.6	2.2088	106.1	2.0925	97.7	.4433	90.8	2.2625	97.2
1902	.8910	104.6	2.2088	106.1	2.0925	97.7	.4508	92.3	2.2625	97.2
1903	.8370	98.2	2.4413	117.3	2.2088	103.1	.4533	92.8	2.1899	94.0
1904	.8835	103.7	2.3250	111.7	2.2088	103.1	.4558	93.3	2.1899	94.0
1905	.8835	103.7	2.4413	117.3	2.3948	111.8	.4588	94.0	2.2568	96.9
1906	.8835	103.7	([d])	....	2.5226	117.8	.4963	101.6	2.2568	96.9
1907	.9145	107.3	([d])	....	2.5575	119.4	.4908	100.5	2.2568	96.9
1908	([d])	....	([d])	....	([d])	....	.4346	89.0	2.2568	96.9

[a] Leather: harness, oak, packers' hides, heavy No. 1. For method of computing relative price, see pages 230 and 231; average price for 1901, $0.3325.

[b] Leather: chrome calf, glazed finish, B grade. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.2250.

[c] Records destroyed. Price estimated by person who furnished data for later years.

[d] Quotations discontinued.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Overcoatings: kersey, standard, 27 to 28 oz.		Print cloths: 28-inch, 64x64.		Shawls: standard, all wool, 72x144 in., 42-oz.		Sheetings: bleached, 10-4, Atlantic.		Sheetings: bleached, 10-4, Pepperell.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price each.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	[a]$1.2472	100.0	$0.02838	100.0	$4.5787	100.0	$0.1836	100.0	$0.1884	100.0
1890	......	......	.03340	117.7	4.9000	107.0	.2241	122.1	.2190	116.2
1891	......	......	.02938	103.5	4.9000	107.0	.2138	116.4	.2008	106.6
1892	......	......	.03386	119.3	4.9000	107.0	.1996	108.7	.1900	100.8
1893	......	......	.03251	114.6	4.9000	107.0	.2052	111.8	.1946	103.3
1894	......	......	.02748	96.8	4.9000	107.0	.1741	94.8	.1742	92.5
1895	......	......	.02864	100.9	4.9000	107.0	.1722	93.8	.1785	94.7
1896	......	......	.02581	90.9	4.0800	89.1	.1700	92.6	.1792	95.1
1897	1.1833	94.9	.02485	87.6	4.0970	89.5	.1604	87.4	.1738	92.3
1898	1.3000	104.2	.02059	72.6	4.1300	90.2	.1527	83.2	.1721	91.3
1899	1.2583	100.9	.02732	96.3	4.0800	89.1	.1641	89.4	.2021	107.3
1900	1.5750	126.3	.03083	108.6	4.9000	107.0	.2043	111.3	.2292	121.7
1901	1.5000	120.3	.02819	99.3	4.9000	107.0	.1853	100.9	.2117	112.4
1902	1.5000	120.3	.03090	108.9	4.9000	107.0	.1917	104.4	.2100	111.5
1903	1.5750	126.3	.032156	113.3	4.9000	107.0	.2124	115.7	.2275	120.8
1904	1.6500	132.3	.033290	117.3	4.9000	107.0	.2355	128.3	.2425	128.7
1905	1.8313	146.8	.031214	110.0	[b]2.2400	[b]117.5	.2024	110.2	.2267	120.3
1906	2.0417	163.7	.036238	127.7	[b]2.4500	[b]128.5	[c].2095	[c]121.5	.2475	131.4
1907	1.9708	158.0	.047512	167.4	[b]2.0400	[b]107.0	[c].2315	[c]134.3	.2883	153.0
1908	1.8500	148.3	.033486	118.0	([d])	......	[c].2390	[c]138.7	.2442	129.6

Year.	Sheetings: bleached, 10-4, Wamsutta S. T.		Sheetings: brown, 4-4, Atlantic A.		Sheetings: brown, 4-4, Indian Head.		Sheetings: brown, 4-4, Pepperell R.		Sheetings: brown, 4-4, Stark A. A.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$0.2949	100.0	$0.0553	100.0	$0.0626	100.0	$0.0551	100.0	$0.0525	100.0
1890	.3126	106.0	.0669	121.0	.0725	115.8	.0640	116.2	.0660	125.7
1891	.3162	107.2	.0653	118.1	.0727	116.1	.0597	108.3	.0594	113.1
1892	.2944	99.8	.0590	106.7	.0648	103.5	.0569	103.3	.0545	103.8
1893	.3056	103.6	.0619	111.9	.0679	108.5	.0583	105.8	.0574	109.3
1894	.2756	93.5	.0549	99.3	.0598	95.5	.0531	96.4	.0521	99.2
1895	.2719	92.2	.0520	94.0	.0585	93.5	.0529	96.0	.0513	97.7
1896	.2925	99.2	.0535	96.7	.0622	99.4	.0558	101.3	.0511	97.3
1897	.2925	99.2	.0490	88.6	.0588	93.9	.0525	95.3	.0452	86.1
1898	.2925	99.2	.0443	80.1	.0540	86.3	.0475	86.2	.0424	80.8
1899	.2951	100.1	.0466	84.3	.0544	86.9	.0504	91.5	.0451	85.9
1900	.3075	104.3	.0555	100.4	.0623	99.5	.0592	107.4	.0508	96.8
1901	.2925	99.2	.0542	98.0	.0631	100.8	.0592	107.4	.0494	94.1
1902	.2925	99.2	.0549	99.3	.0625	99.8	.0569	103.3	[e].0566	[e]92.6
1903	.3038	103.0	.0636	115.0	.0681	108.8	.0599	108.7	[e].0623	[e]101.9
1904	.2775	94.1	.0718	129.8	.0802	128.1	.0669	121.4	[e].0715	[e]117.0
1905	.2700	91.6	.0639	115.6	.0758	121.1	.0644	116.9	[e].0725	[e]118.6
1906	.2733	92.7	.0739	133.6	.0802	128.1	.0685	124.3	[e].0767	[e]125.5
1907	.3050	103.4	.0768	138.9	.0835	133.4	.0746	135.4	[e].0777	[e]127.1
1908	.2794	94.7	([d])	......	.0779	124.4	.0683	124.0	[f].0519	[f]102.0

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[a] Average for 1897-1899.

[b] Shawls: standard, all wool (low grade), 72x144 inch, 40 to 42 ounce. For method of computing relative price, see pages 230 and 231; average price for 1904, $2.04.

[c] Sheetings: bleached, 9-4, Atlantic. For method of computing relative price, see pages 230 and 231; average price for 1905, $0.1901.

[d] Quotations discontinued.

[e] Sheetings: brown, 4-4, Massachusetts Mills, Flying Horse brand. For method of computing relative price, see pages 230 and 231; average price for 1901, $0.0575.

[f] Sheetings: brown, 4-4, Lawrence L. L. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.0647.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Shirtings: bleached, 4-4, Fruit of the Loom.		Shirtings: bleached, 4-4, Hope.		Shirtings: bleached, 4-4, Lonsdale.		Shirtings: bleached, 4-4, New York Mills.		Shirtings: bleached, 4-4, Wamsutta <o> XX.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$0.0728	100.0	$0.0630	100.0	$0.0727	100.0	$0.0876	100.0	$0.0948	100.0
1890	.0845	116.1	.0726	115.2	.0845	116.2	.0968	110.5	.1011	106.6
1891	.0799	109.8	.0703	111.6	.0822	113.1	.0965	110.2	.1009	106.4
1892	.0808	111.0	.0663	105.2	.0812	111.7	.0931	106.3	.0973	102.6
1893	.0832	114.3	.0713	113.2	.0832	114.4	.0925	105.6	.0981	103.5
1894	.0727	99.9	.0620	98.4	.0727	100.0	.0885	101.0	.0950	100.2
1895	.0700	96.2	.0608	96.5	.0697	95.9	.0851	97.1	.0969	102.2
1896	.0696	95.6	.0620	98.4	.0685	94.2	.0885	101.0	.0951	100.3
1897	.0641	88.0	.0574	91.1	.0633	87.1	.0836	95.4	.0935	98.6
1898	.0584	80.2	.0518	82.2	.0595	81.8	.0784	89.5	.0807	85.1
1899	.0644	88.5	.0551	87.5	.0626	86.1	.0725	82.8	.0892	94.1
1900	.0753	103.4	.0671	106.5	.0731	100.6	.0786	89.7	.0965	101.8
1901	.0750	103.0	.0699	111.0	.0738	101.5	.0760	86.8	.0875	92.3
1902	.0756	103.8	.0676	107.3	.0741	101.9	.0766	87.4	.0885	93.4
1903	.0767	105.4	.0675	107.1	.0755	103.9	.0850	97.0	.0974	102.7
1904	.0802	110.2	.0705	111.9	.0796	109.5	.0830	94.7	.0921	97.2
1905	.0748	102.7	.0663	105.2	.0739	101.7	.0848	96.8	.0942	99.4
1906	.0817	112.2	.0728	115.6	.0806	110.9	[a].0946	[a]108.0	.1033	109.0
1907	.1117	153.4	.0905	143.7	.1025	141.0	[a].1163	[a]132.8	.1100	116.0
1908	.0913	125.4	([b])	....	.0873	120.1	[a].0938	[a]107.1	.1119	118.0

Year.	Silk: raw, Italian, classical.		Silk: raw, Japan, filatures.		Suitings: clay worsted diagonal, 12-oz.		Suitings: clay worsted diagonal, 16-oz.		Suitings: indigo blue, all wool, 14-oz., Middlesex.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$4.2558	100.0	$4.0187	100.0	[c]$0.8236	100.0	[c]$1.0068	100.0	$1.3230	100.0
1890	5.2238	122.7	5.2429	130.5	....	....	....	....	1.5470	116.9
1891	4.1865	98.4	4.0110	99.8	....	....	....	....	1.5470	116.9
1892	4.4826	105.3	4.3266	107.7	....	....	....	....	1.5470	116.9
1893	5.0289	118.2	4.5409	113.0	....	....	....	....	1.5084	114.0
1894	3.6816	86.5	3.3627	83.7	....	....	....	....	1.4697	111.1
1895	4.0373	94.9	3.7855	94.2	.7621	92.5	.9445	93.8	1.1523	87.1
1896	3.6293	85.3	3.4072	84.8	.7337	89.1	.8819	87.6	1.1375	86.0
1897	3.6404	85.5	3.4637	86.2	.7595	92.2	.9392	93.3	1.0465	79.1
1898	3.8768	91.1	3.6376	90.5	.9165	111.3	1.1216	111.4	1.1375	86.0
1899	4.7706	112.1	4.4085	109.7	.9461	114.9	1.1468	113.9	1.1375	86.0
1900	4.5128	106.0	4.1690	103.7	1.0819	131.4	1.3463	133.7	1.1375	86.0
1901	3.8466	90.4	3.5132	87.4	.9113	110.6	1.1175	111.0	1.1849	89.6
1902	4.1085	96.5	3.8224	95.1	.9131	110.9	1.0931	108.6	1.3119	99.2
1903	4.5241	106.3	4.1346	102.9	.9488	115.2	1.1288	112.1	1.4400	108.8
1904	3.8651	90.8	3.6416	90.6	.9244	112.2	1.1036	109.6	1.4438	109.1
1905	4.1085	96.5	3.9912	99.3	1.0931	132.7	1.3013	129.3	1.5300	115.6
1906	4.3249	101.6	4.1632	103.6	1.2150	147.5	1.4738	146.4	1.7100	129.3
1907	5.5812	131.1	5.0602	125.9	1.1700	142.1	1.4025	139.3	1.7100	129.3
1908	4.1807	98.2	3.8902	96.8	1.1138	135.2	1.3388	133.0	1.5750	119.0

[a] Williamsville, A1. [b] Quotations discontinued. [c] Average for 1895-1899.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Suitings: indigo blue, all wool, 16-oz.		Suitings: serge, Washington Mills 6700.		Tickings: Amoskeag A. C. A.		Trouserings: fancy worsted, 22 to 23 oz.		Underwear: white, all wool, etc.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price, 12 garments.	Relative price.
Average, 1890-1899	$1.9154	100.0	[a] $0.7526	100.0	$0.1061	100.0	[a] $1.9456	100.0	$23.31	100.0
1890	[b] 2.0925	109.2	....	....	.1200	113.1	....	....	24.75	106.2
1891	[b] 2.0925	109.2	....	....	.1175	110.7	....	....	25.65	110.0
1892	[b] 2.0925	109.2	.9100	120.9	.1150	108.4	2.0734	106.6	25.65	110.0
1893	2.0925	109.2	.9100	120.9	.1181	111.3	2.0734	106.6	25.65	110.0
1894	1.7670	92.3	.6825	90.7	.1084	102.2	1.9238	98.9	21.60	92.7
1895	1.5903	83.0	.6825	90.7	.1006	94.8	1.7100	87.9	21.60	92.7
1896	1.7228	89.9	.6143	81.6	.1019	96.0	1.7955	92.3	21.60	92.7
1897	1.6740	87.4	.6598	87.7	.0975	91.9	1.7955	92.3	21.60	92.7
1898	1.9763	103.2	.7508	99.8	.0894	84.3	2.1197	108.9	21.60	92.7
1899	2.0538	107.2	.8106	107.7	.0923	87.0	2.0734	106.6	23.40	100.4
1900	2.2669	118.4	.8100	107.6	.1084	102.2	2.2871	117.6	23.40	100.4
1901	2.0925	109.2	.8025	106.6	.1013	95.5	1.9879	102.2	23.40	100.4
1902	2.0925	109.2	.7913	105.1	.1050	99.0	1.9800	101.8	23.40	100.4
1903	2.1576	112.6	.7556	100.4	.1104	104.1	[c] 2.0925	[c] 104.6	23.40	100.4
1904	2.1855	114.1	.7744	102.9	.1213	114.3	[c] 2.1244	[c] 106.2	23.40	100.4
1905	2.2785	119.0	.9638	128.1	.1083	102.1	[c] 2.2331	[c] 111.6	23.40	100.4
1906	2.4180	126.2	1.0444	138.8	.1263	119.0	[c] 2.4131	[c] 120.6	27.00	115.8
1907	2.4180	126.2	1.0500	139.5	.1373	129.4	[c] 2.4469	[c] 122.3	27.00	115.8
1908	(d)	....	.9938	132.0	.1125	106.0	[e] 2.4938	[e] 124.6	27.00	115.8

Year.	Underwear: white, merino, 52% wool, etc.		Women's dress goods: alpaca, cotton warp, 22-inch, Hamilton.		Women's dress goods: cashmere, all wool, Atlantic J.		Women's dress goods: cashmere, cotton warp, Atlantic F.		Women's dress goods: cashmere, cotton warp, 22-inch, Hamilton.	
	Average price, 12 garments.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per yard.	Relative price.
Average, 1890-1899	$15.57	100.0	$0.0680	100.0	$0.2905	100.0	$0.1520	100.0	$0.0758	100.0
1890	16.65	106.9	.0735	108.1	.3479	119.8	.1813	119.3	.0833	109.9
1891	17.55	112.7	.0735	108.1	.3663	126.1	.1813	119.3	.0833	109.9
1892	17.55	112.7	.0723	106.3	.3724	128.2	.1789	117.7	.0821	108.3
1893	17.55	112.7	.0711	104.6	.3247	111.8	.1495	98.4	.0809	106.7
1894	14.85	95.4	.0686	100.9	.2450	84.3	.1348	88.7	.0760	100.3
1895	14.40	92.5	.0637	93.7	.2352	81.0	.1274	83.8	.0735	97.0
1896	14.40	92.5	.0637	93.7	.1960	67.5	.1270	83.6	.0711	93.8
1897	14.40	92.5	.0637	93.7	.2389	82.2	.1372	90.3	.0686	90.5
1898	14.85	95.4	.0637	93.7	.2573	88.6	.1434	94.3	.0686	90.5
1899	13.50	86.7	.0657	96.6	.3208	110.4	.1593	104.8	.0706	93.1
1900	14.85	95.4	.0711	104.6	.3459	119.1	.1642	108.0	.0760	100.3
1901	14.85	95.4	.0711	104.6	.3234	111.3	.1585	104.3	.0760	100.3
1902	14.85	95.4	.0705	103.7	.3234	111.3	.1642	108.0	.0754	99.5
1903	[f] 16.20	[f] 95.4	.0690	101.5	.3320	114.3	.1679	110.5	.0741	97.8
1904	[f] 16.20	[f] 95.4	.0764	112.4	.3418	117.7	.1740	114.5	.0809	106.7
1905	[f] 16.20	[f] 95.4	[g] .1150	[g] 114.9	.3730	128.4	.2017	132.7	[h] .1867	[h] 107.7
1906	[f] 18.00	[f] 106.0	[g] .1217	[g] 121.6	.3920	134.9	.2156	141.8	[h] .1900	[h] 109.6
1907	[f] 18.00	[f] 106.0	[g] .1250	[g] 124.9	.3920	134.9	.2234	147.0	[h] .1908	[h] 110.1
1908	[f] 18.00	[f] 106.0	[i] .3491	[i] 124.9	[j] .3185	[j] 127.1	.2107	138.6	[h] .1967	[h] 113.5

[a] Average for 1892-1899.

[b] Records destroyed. Price estimated by person who furnished data for later years.

[c] 21 to 22 ounce. For average price in 1902 and method of computing relative price, see pages 230 and 231.

[d] Quotations discontinued.

[e] 19 to 20 ounce. For method of computing relative price, see pages 230 and 231.

[f] 60 per cent wool, etc. For average price in 1902 and method of computing relative price, see pages 230 and 231.

[g] Danish cloth, cotton warp and worsted filling, 22-inch. For method of computing relative price, see pages 230 and 231; average price for 1904, $0.1125.

[h] Poplar cloth, cotton warp and worsted filling, 36-inch. For method of computing relative price, see pages 230 and 231; average price for 1904, $0.1850.

[i] Sicilian cloth, cotton warp, 50-inch. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.3491.

[j] Cashmere, all wool, 8-9 twill, 35-inch, Atlantic Mills. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.3381.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Cloths and clothing.									
	Women's dress goods: cashmere, cotton warp, 27-inch, Hamilton.		Women's dress goods: Franklin sackings, 6-4.		Wool: Ohio, fine fleece (X and XX grade), scoured.		Wool: Ohio, medium fleece (¼ and ⅜ grade), scoured.		Worsted yarns: 2-40s, Australian fine.	
	Average price per yard.	Relative price.	Average price per yard.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$0.0883	100.0	$0.5151	100.0	$0.5526	100.0	$0.4564	100.0	$1.0183	100.0
1890	.0980	111.0	.5938	115.3	.7156	129.5	.6143	134.6	1.2263	120.4
1891	.0980	111.0	.6175	119.9	.6857	124.1	.5820	127.5	1.2354	121.3
1892	.0968	109.6	.6175	119.9	.6119	110.7	.5276	115.6	1.2175	119.6
1893	.0937	106.1	.6056	117.6	.5639	102.0	.4620	101.2	1.1342	111.4
1894	.0907	102.7	.4988	96.8	.4448	80.5	.3542	77.6	.9292	91.3
1895	.0846	95.8	.4342	84.3	.3768	68.2	.3280	71.9	.7425	72.9
1896	.0821	93.0	.4156	80.7	.3940	71.3	.3186	69.8	.7250	71.2
1897	.0784	88.8	.4235	82.2	.4955	89.7	.3999	87.6	.8517	83.6
1898	.0784	88.8	.4552	88.4	.6150	111.3	.4805	105.3	1.0308	101.2
1899	.0821	93.0	.4889	94.9	.6232	112.8	.4966	108.8	1.0908	107.1
1900	.0882	99.9	.6096	118.3	.6594	119.3	.5296	116.0	1.2050	118.3
1901	.0907	102.7	.5383	104.5	.5453	98.7	.4315	94.5	1.0404	102.2
1902	.0901	102.0	.5581	108.3	.5770	104.4	.4436	97.2	1.1229	110.3
1903	.0894	101.2	.5898	114.5	.6546	118.5	.4658	102.1	1.1771	115.6
1904	.0976	110.5	.5839	113.4	.6862	124.2	.4869	106.7	1.1875	116.6
1905	.1072	121.4	.6749	131.0	.7591	137.4	.5348	117.2	1.2525	123.0
1906	[a].1911	[a]124.6	.6868	133.3	.7181	129.9	.5125	112.3	1.2933	127.0
1907	[a].1960	[a]127.8	.6531	126.8	.7181	129.9	.5158	113.0	1.2967	127.3
1908	[a].1911	[a]124.6	[b].6983	[b]126.8	.7163	129.6	.4899	107.3	1.2300	120.8

Year.	Cloths, etc.		Fuel and lighting.							
	Worsted yarns: 2-40s, XXX, white, in skeins.		Candles: adamantine, 6s, 14-ounce.		Coal: anthracite, broken.		Coal: anthracite, chestnut.		Coal: anthracite, egg.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per ton.	Relative price.	Average price per ton.	Relative price.	Average price per ton.	Relative price.
Average, 1890-1899	$1.0071	100.0	$0.0782	100.0	$3.3669	100.0	$3.5953	100.0	$3.5936	100.0
1890	1.2500	124.1	.0800	102.3	3.4858	103.5	3.3533	93.3	3.6142	100.6
1891	1.2625	125.4	.0800	102.3	3.4433	102.3	3.4758	96.7	3.7508	104.4
1892	1.1563	114.8	.0800	102.3	3.6152	107.4	3.9443	109.7	3.9803	110.8
1893	1.0833	107.6	.0883	112.9	3.5628	105.8	4.1673	115.9	3.8520	107.2
1894	.9188	91.2	.0867	110.9	3.4172	101.5	3.5416	98.5	3.3903	94.3
1895	.7563	75.1	.0850	108.7	3.2833	97.5	2.9793	82.9	3.0296	84.3
1896	.7500	74.5	.0850	108.7	3.2691	97.1	3.5561	98.9	3.5490	98.8
1897	.8188	81.3	.0745	95.3	3.2465	96.4	3.7366	103.9	3.7986	105.7
1898	1.0042	99.7	.0613	78.4	3.2108	95.4	3.5525	98.8	3.5993	100.2
1899	1.0708	106.3	.0613	78.4	3.1350	93.1	3.6458	101.4	3.3714	93.8
1900	1.1938	118.5	.1059	135.4	3.2706	97.1	3.9166	108.9	3.5843	99.7
1901	1.0283	102.1	.1100	140.7	3.5508	105.5	4.3270	120.4	4.0565	112.9
1902	[c]1.1392	[c]113.1	.1100	140.7	3.7186	110.4	4.4597	124.0	4.3673	121.5
1903	[c]1.2125	[c]120.4	.0996	127.4	4.2496	126.2	4.8251	134.2	4.8251	134.3
1904	[c]1.1717	[c]116.3	.0900	115.1	4.2473	126.1	4.8250	134.2	4.8227	134.2
1905	[c]1.2733	[c]126.4	.0858	109.7	4.2134	125.1	4.8226	134.1	4.8246	134.3
1906	[c]1.3092	[c]130.0	.0766	98.0	4.2021	124.8	4.8601	135.2	4.8629	135.3
1907	[c]1.2933	[c]128.4	.0741	94.8	4.2040	124.9	4.8204	134.1	4.8211	134.2
1908	[d].8017	[d]114.4	.0731	93.5	4.2019	124.8	4.8206	134.1	4.8203	134.1

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[a] Cashmere, cotton warp, 36-inch, Hamilton. For method of computing relative price, see pages 230 and 231; average price for 1905, $0.1862.

[b] Panama cloth, all wool, 54-inch. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.6983.

[c] Designated as XXXX.

[d] 2-32s, crossbred stock, white, in skeins. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.90.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Fuel and lighting.									
	Coal: anthracite, stove.		Coal: bituminous, Georges Creek (at mine).		Coal: bituminous, Georges Creek (f. o. b. N. Y. Harbor).		Coal: bituminous, Pittsburg (Youghiogheny).		Coke: Connellsville, furnace.	
	Average price per ton.	Relative price.	Average price per ton.	Relative price.	Average price per ton.	Relative price.	Average price per bushel.	Relative price.	Average price per ton.	Relative price.
Average, 1890-1899	$3.7949	100.0	$0.8887	100.0	$2.7429	100.0	$0.0643	100.0	$1.6983	100.0
1890	3.7108	97.8	.8625	97.1	2.9875	108.9	.0664	103.3	2.0833	122.7
1891	3.8542	101.6	.9500	106.9	3.0313	110.5	.0789	122.7	1.8750	110.4
1892	4.1532	109.4	.9000	101.3	2.9313	106.9	.0749	116.5	1.8083	106.5
1893	4.1931	110.5	.9208	103.6	2.9500	107.6	.0758	117.9	1.4792	87.1
1894	3.6003	94.9	.8208	92.4	2.7375	99.8	.0634	98.6	1.0583	62.3
1895	3.1264	82.4	.7750	87.2	2.8125	102.5	.0600	93.3	1.3250	78.0
1896	3.7942	100.0	.9000	101.3	2.6625	97.1	.0573	89.1	1.8750	110.4
1897	4.0146	105.8	.8333	93.8	2.4417	89.0	.0570	88.6	1.6167	95.2
1898	3.7978	100.1	.9125	102.7	2.1750	79.3	.0565	87.9	1.6771	98.8
1899	3.7047	97.6	1.0125	113.9	2.7000	98.4	.0531	82.6	2.1854	128.7
1900	3.9451	104.0	1.2000	135.0	2.9083	106.0	.0752	117.0	2.6458	155.8
1901	4.3224	113.9	1.3375	150.5	2.9250	106.6	.0752	117.0	1.9625	115.6
1902	4.4627	117.6	2.1250	239.1	4.0583	148.0	.0787	122.4	2.6875	158.2
1903	4.8245	127.1	2.3958	269.6	4.4375	161.8	.0925	143.9	2.9125	171.5
1904	4.8246	127.1	1.7500	196.9	3.1958	116.5	.0852	132.5	1.6375	96.4
1905	4.8226	127.1	1.6000	180.0	3.1500	114.8	.0800	124.4	2.2875	134.7
1906	4.8615	128.1	1.5500	174.4	3.1250	113.9	.0789	122.7	2.6750	157.5
1907	4.8215	127.1	1.5375	173.0	3.2375	118.0	.0824	128.1	2.8250	166.3
1908	4.8226	127.1	1.4417	162.2	3.0792	112.3	.0851	132.3	1.7083	100.6

Year.	Fuel and lighting.								Metals and implements.	
	Matches: parlor, domestic.		Petroleum: crude.		Petroleum: refined, for export.		Petroleum: refined, 150°, w. w.		Augers: extra, ¾-inch.	
	Average price 144 boxes (200s).	Relative price.	Average price per barrel.	Relative price.	Average price per gallon.	Relative price.	Average price per gallon.	Relative price.	Average price each.	Relative price.
Average, 1890-1899	$1.7563	100.0	$0.9102	100.0	$0.0649	100.0	$0.0890	100.0	$0.1608	100.0
1890	1.9583	111.5	.8680	95.4	.0733	112.9	.0995	111.8	.1900	118.2
1891	1.7500	99.6	.6697	73.6	.0685	105.5	.0879	98.8	.1900	118.2
1892	1.7500	99.6	.5564	61.1	.0609	93.8	.0794	89.2	.1900	118.2
1893	1.7500	99.6	.6399	70.3	.0522	80.4	.0725	81.5	.1800	111.9
1894	1.6667	94.9	.8389	92.2	.0515	79.4	.0725	81.5	.1542	95.9
1895	1.6875	96.1	1.3581	149.2	.0711	109.6	.0922	103.6	.1333	82.9
1896	1.7500	99.6	1.1789	129.5	.0702	108.2	.1039	116.7	.1394	86.7
1897	1.7500	99.6	.7869	86.5	.0597	92.0	.0900	101.1	.1425	88.6
1898	1.7500	99.6	.9118	100.2	.0628	96.8	.0909	102.1	.1425	88.6
1899	1.7500	99.6	1.2934	142.1	.0791	121.9	.1015	114.0	.1465	91.1
1900	1.7500	99.6	1.3521	148.5	.0854	131.6	.1188	133.5	.2000	124.4
1901	1.7500	99.6	1.2095	132.9	.0749	115.4	.1096	123.1	.1700	105.7
1902	1.5833	90.1	1.2369	135.9	.0734	113.1	.1108	124.5	.1800	111.9
1903	1.5000	85.4	1.5886	174.5	.0860	132.5	.1363	153.1	.2310	143.7
1904	1.5000	85.4	1.6270	178.8	.0826	127.3	.1367	153.6	.2400	149.3
1905	1.5000	85.4	1.3842	152.1	.0722	111.2	.1263	141.9	.3067	190.7
1906	1.5000	85.4	1.5975	175.5	.0762	117.4	.1300	146.1	.3567	221.8
1907	1.5000	85.4	1.7342	190.5	.0824	127.0	.1346	151.2	.3600	223.9
1908	1.5000	85.4	1.7800	195.6	.0869	133.9	.1350	151.7	[a] .4200	[a] 223.9

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[a] Augers, extra, 1-inch. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.42.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Metals and implements.									
	Axes: M. C. O., Yankee.		Bar iron: best refined, from mill (Pittsburg market).		Bar iron: best refined, from store (Philadelphia market).		Barb wire: galvanized.		Butts: loose joint, cast, 3 x 3 inch.	
	Average price each.	Relative price.	Average price per lb.	Relative price.	Average price per lb.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per pair.	Relative price.
Average, 1890-1899	$0.4693	100.0	$0.0145	100.0	$0.0164	100.0	$2.5261	100.0	$0.0316	100.0
1890	.5650	120.4	.0184	126.9	.0205	125.0	3.5665	141.2	.0353	111.7
1891	.5550	118.3	.0171	117.9	.0190	115.9	3.2189	127.4	.0353	111.7
1892	.5000	106.5	.0164	113.1	.0187	114.0	2.7662	109.5	.0306	96.8
1893	.5000	106.5	.0150	103.4	.0170	103.7	2.5188	99.7	.0311	98.4
1894	.4733	100.9	.0120	82.8	.0134	81.7	2.1750	86.1	.0303	95.9
1895	.4600	98.0	.0125	86.2	.0144	87.8	2.2458	88.9	.0317	100.3
1896	.4150	88.4	.0122	84.1	.0140	85.4	1.9625	77.7	.0329	104.1
1897	.3938	83.9	.0110	75.9	.0131	79.9	1.8000	71.3	.0306	96.8
1898	.3750	79.9	.0107	73.8	.0128	78.0	1.8375	72.7	.0292	92.4
1899	.4555	97.1	.0195	134.5	.0207	126.2	3.1696	125.5	.0292	92.4
1900	.4831	102.9	.0215	148.3	.0196	119.5	3.3942	134.4	.0400	126.6
1901	.4166	88.8	.0180	124.1	.0184	112.2	3.0375	120.2	.0369	116.8
1902	.4833	103.0	.0194	133.8	.0213	129.9	2.9542	116.9	.0400	126.6
1903	.5050	107.6	.0177	122.1	.0200	122.0	2.7375	108.4	.0400	126.6
1904	.5788	123.3	.0148	102.1	.0172	104.9	2.5075	99.3	.0400	126.6
1905	.6323	134.7	.0187	129.0	.0192	117.1	2.3829	94.3	.0400	126.6
1906	.6715	143.1	[a].0169	[a]126.8	.0198	120.7	2.4283	96.1	.0400	126.6
1907	.6800	144.9	[a].0175	[a]131.3	.0211	128.7	2.6342	104.3	.0400	126.6
1908	.6800	144.9	[a].0146	[a]109.5	.0170	103.7	2.6217	103.8	[b].0900	[b] 126.6

Year.	Chisels: extra, socket firmer, 1-inch.		Copper: ingot, lake.		Copper: sheet, hot-rolled (base sizes).		Copper wire: bare.		Doorknobs: steel, bronze plated.	
	Average price each.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pair.	Relative price.
Average, 1890-1899	$0.1894	100.0	$0.1234	100.0	$0.1659	100.0	$0.1464	100.0	$0.1697	100.0
1890	.2100	110.9	.1575	127.6	.2275	137.1	.1875	128.1	.1660	97.8
1891	.2100	110.9	.1305	105.8	.1900	114.5	.1650	112.7	.1660	97.8
1892	.2100	110.9	.1154	93.5	.1600	96.4	.1438	98.2	.1660	97.8
1893	.1933	102.1	.1093	88.6	.1500	90.4	.1350	92.2	.1660	97.8
1894	.1733	91.5	.0948	76.8	.1425	85.9	.1156	79.0	.1660	97.8
1895	.1710	90.3	.1075	87.1	.1425	85.9	.1238	84.6	.1953	115.1
1896	.1793	94.7	.1097	88.9	.1425	85.9	.1356	92.6	.1733	102.1
1897	.1710	90.3	.1132	91.7	.1463	88.2	.1375	93.9	.1660	97.8
1898	.1720	90.8	.1194	96.8	.1400	84.4	.1375	93.9	.1660	97.8
1899	.2038	107.6	.1767	143.2	.2175	131.1	.1825	124.7	.1660	97.8
1900	.2417	127.6	.1661	134.6	.2067	124.6	.1800	123.0	.1813	106.8
1901	.2300	121.4	.1687	136.7	.2088	125.9	.1815	124.0	.1900	112.0
1902	.2700	142.6	.1201	97.3	.1783	107.5	.1326	90.6	.2153	126.9
1903	.2800	147.8	.1368	110.9	.1917	115.6	.1497	102.3	.2250	132.6
1904	.3000	158.4	.1311	106.2	.1800	108.5	.1438	98.2	.2458	144.8
1905	.3967	209.5	.1576	127.7	.1992	120.1	.1702	116.3	.3625	213.6
1906	.4188	221.1	.1961	158.9	.2375	143.2	.2108	144.0	.4408	259.8
1907	.4438	234.3	.2125	172.2	.2792	168.3	.2402	164.1	.4500	265.2
1908	.3750	198.0	[c].1334	[c]110.5	.1792	108.0	.1519	103.8	.4000	235.7

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[a] Bar iron: common to best refined (Pittsburg market). For method of computing relative price, see pages 230 and 231; average price for 1905, $0.0172.

[b] Butts, loose pin, wrought steel, 3½ x 3½ inch. For method of computing relative price, see pages 230 and 231; average price for 1907, $0.09.

[c] Copper, ingot, electrolytic. For method of computing relative price, see pages 230 and 31; average price for 1907, $0.2078.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890–1899)—Continued.

Year.	Metals and implements.									
	Files: 8-inch mill bastard.		Hammers: Maydole No. 1½.		Lead: pig.		Lead pipe.		Locks: common mortise.	
	Average price per dozen.	Relative price.	Average price each.	Relative price.	Average price per pound.	Relative price.	Average price per 100 lbs.	Relative price.	Average price each.	Relative price.
Average, 1890–1899	$0.8527	100.0	$0.3613	100.0	$0.0381	100.0	$4.8183	100.0	$0.0817	100.0
1890	.9100	106.7	.3500	96.9	.0440	115.5	5.4000	112.1	.0830	101.6
1891	.8917	104.6	.3500	96.9	.0437	114.7	5.6000	116.2	.0830	101.6
1892	.8717	102.2	.3500	96.9	.0413	108.4	5.1833	107.6	.0830	101.6
1893	.8667	101.6	.3500	96.9	.0374	98.2	5.0000	103.8	.0830	101.6
1894	.8300	97.3	.3500	96.9	.0331	86.9	4.4333	92.0	.0818	100.1
1895	.8133	95.4	.3525	97.6	.0326	85.6	4.2000	87.2	.0833	102.0
1896	.7775	91.2	.3800	105.2	.0300	78.7	4.1000	85.1	.0867	106.1
1897	.8050	94.4	.3800	105.2	.0358	94.0	4.3167	89.6	.0833	102.0
1898	.8250	96.8	.3633	100.6	.0380	99.7	4.6000	95.5	.0750	91.8
1899	.9358	109.7	.3867	107.0	.0448	117.6	5.3500	111.0	.0750	91.8
1900	1.0900	127.8	.4189	115.9	.0445	116.8	5.1208	106.3	.0788	96.5
1901	1.0500	123.1	.4233	117.2	.0438	115.0	5.0479	104.8	.0750	91.8
1902	1.0500	123.1	.4233	117.2	.0411	107.9	5.2167	108.3	.0850	104.0
1903	1.0500	123.1	.4660	129.0	.0428	112.3	5.1958	107.8	.0900	110.2
1904	1.0400	122.0	.4660	129.0	.0443	116.3	4.7950	99.5	.1025	125.5
1905	1.0367	121.6	.4660	129.0	.0479	125.7	5.2250	108.4	.1496	183.1
1906	1.0217	119.8	.4660	129.0	.0588	154.3	6.4208	133.3	.1808	221.3
1907	.9975	117.0	.4660	129.0	.0552	144.9	6.7050	139.2	.2000	244.8
1908	.9542	111.9	.4660	129.0	.0422	110.8	4.7400	98.4	.1660	203.2

Year.	Nails: cut, 8-penny, fence and common.		Nails: wire, 8-penny, fence and common.		Pig iron: Bessemer.		Pig iron: foundry No. 1.		Pig iron: foundry No. 2.	
	Average price per 100 lbs.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per ton.	Relative price.	Average price per ton.	Relative price.	Average price per ton.	Relative price.
Average, 1890–1899	$1.8275	100.0	$2.1618	100.0	$13.7783	100.0	$14.8042	100.0	$13.0533	100.0
1890	2.2875	125.2	2.9646	137.1	18.8725	137.0	18.4083	124.3	17.1563	131.4
1891	1.8333	100.3	2.4667	114.1	15.9500	115.8	17.5208	118.4	15.3958	117.9
1892	1.7583	96.2	2.1896	101.3	14.3667	104.3	15.7492	106.4	13.7729	105.5
1893	1.6813	92.0	1.9917	92.1	12.8692	93.4	14.5167	98.1	12.4396	95.3
1894	1.5271	83.6	1.6521	76.4	11.3775	82.6	12.6642	85.5	10.8458	83.1
1895	1.9250	105.3	2.1177	98.0	12.7167	92.3	13.1033	88.5	11.6750	89.0
1896	2.7125	148.4	2.9250	135.3	12.1400	88.1	12.9550	87.5	11.7708	90.2
1897	1.3329	72.9	1.4854	68.7	10.1258	73.5	12.1008	81.7	10.1000	77.4
1898	1.1927	65.3	1.4375	66.5	10.3317	75.0	11.6608	78.8	10.0271	76.8
1899	2.0240	110.8	2.3875	110.4	19.0333	138.1	19.3633	130.8	17.3500	132.9
1900	2.2500	123.1	2.6333	121.8	19.4925	141.5	19.9800	135.0	18.5063	141.8
1901	2.1125	115.6	2.3646	109.4	15.9350	115.7	15.8683	107.2	14.7188	112.8
1902	2.1333	116.7	2.1042	97.3	20.6742	150.0	22.1933	149.9	21.2396	162.7
1903	2.1958	120.2	2.0750	96.0	18.9758	137.7	19.9158	134.5	19.1417	146.6
1904	1.8188	99.5	1.9063	88.2	13.7558	99.8	15.5725	105.2	13.6250	104.4
1905	1.8250	99.9	1.8958	87.7	16.3592	118.7	17.8850	120.8	16.4104	125.7
1906	1.9313	105.7	1.9583	90.6	19.5442	141.8	20.9825	141.7	19.2667	147.6
1907	2.1625	118.3	2.1167	97.9	22.8417	165.8	23.8950	161.4	23.8688	182.9
1908	1.9500	106.7	2.1000	97.1	17.0700	123.9	17.7000	119.6	16.2500	124.5

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Metals and implements.									
	Pig iron: gray forge, southern, coke.		Planes: Bailey No. 5, jack plane.		Quicksilver.		Saws: crosscut, Disston No. 2.		Saws: hand, Disston No. 7.	
	Average price per ton.	Relative price.	Average price each.	Relative price.	Average price per pound.	Relative price.	Average price each.	Relative price.	Average price per dozen.	Relative price.
Average, 1890-1899	$11.0892	100.0	$1.3220	100.0	$0.5593	100.0	$1.6038	100.0	$12.780	100.0
1890	14.5000	130.8	1.4200	107.4	.7300	130.5	1.6038	100.0	12.400	112.7
1891	12.5167	112.9	1.4200	107.4	.6283	112.3	1.6038	100.0	12.600	98.6
1892	11.7917	106.3	1.4200	107.4	.5642	100.9	1.6038	100.0	12.600	98.6
1893	10.6354	95.9	1.4200	107.4	.5213	93.2	1.6038	100.0	12.600	98.6
1894	8.9375	80.6	1.3783	104.3	.4792	85.7	1.6038	100.0	12.600	98.6
1895	10.3229	93.1	1.2417	93.9	.5133	91.8	1.6038	100.0	12.600	98.6
1896	9.6042	86.6	1.2300	93.0	.4979	89.0	1.6038	100.0	12.600	98.6
1897	8.8021	79.4	1.2300	93.0	.5157	92.2	1.6038	100.0	12.600	98.6
1898	8.7188	78.6	1.2300	93.0	.5425	97.0	1.6038	100.0	12.600	98.6
1899	15.0625	135.8	1.2300	93.0	.6004	107.3	1.6038	100.0	12.600	98.6
1900	15.6042	140.7	1.4142	107.0	.6769	121.0	1.6038	100.0	12.600	98.6
1901	12.5521	113.2	1.4600	110.4	.6629	118.5	1.6038	100.0	12.600	98.6
1902	17.6042	158.8	1.5100	114.2	.6458	115.5	1.6038	100.0	12.600	98.6
1903	16.2292	146.4	1.5300	115.7	.6342	113.4	1.6038	100.0	12.600	98.6
1904	11.6771	105.3	1.5300	115.7	.5900	105.5	1.6038	100.0	12.600	98.6
1905	14.4896	130.7	1.5300	115.7	.5446	97.4	1.6038	100.0	12.600	98.6
1906	16.5313	149.1	1.7100	129.3	.5517	98.6	1.6038	100.0	12.950	101.3
1907	20.9875	189.3	1.5300	115.7	.5429	97.1	1.6038	100.0	12.950	101.3
1908	14.3750	129.6	1.5300	115.7	.6100	109.1	1.6038	100.0	12.950	101.3

Year.	Shovels: Ames No. 2.		Silver: bar, fine.		Spelter: western.		Steel billets.		Steel rails.	
	Average price per dozen.	Relative price.	Average price per ounce.	Relative price.	Average price per pound.	Relative price.	Average price per ton.	Relative price.	Average price per ton.	Relative price.
Average, 1890-1899	$7.8658	100.0	$0.74899	100.0	$0.0452	100.0	$21.5262	100.0	$26.0654	100.0
1890	7.8700	100.1	1.05329	140.6	.0554	122.6	30.4675	141.5	31.7792	121.9
1891	7.8700	100.1	.99034	132.2	.0508	112.4	25.3292	117.7	29.9167	114.8
1892	7.8700	100.1	.87552	116.9	.0465	102.9	23.6308	109.8	30.0000	115.1
1893	7.8700	100.1	.78219	104.4	.0410	90.7	20.4358	94.9	28.1250	107.9
1894	7.4500	94.7	.64043	85.5	.0355	78.5	16.5783	77.0	24.0000	92.1
1895	7.4500	94.7	.66268	88.5	.0362	80.1	18.4842	85.9	24.3333	93.4
1896	7.8100	99.3	.68195	91.0	.0401	88.7	18.8333	87.5	28.0000	107.4
1897	7.9300	100.8	.60775	81.1	.0421	93.1	15.0800	70.1	18.7500	71.9
1898	7.9300	100.8	.59065	78.9	.0453	100.2	15.3058	71.1	17.6250	67.6
1899	8.6075	109.4	.60507	80.8	.0588	130.1	31.1167	144.6	28.1250	107.9
1900	9.1200	115.9	.62065	82.9	.0442	97.8	25.0625	116.4	32.2875	123.9
1901	9.1200	115.9	.59703	79.7	.0405	89.6	24.1308	112.1	27.3333	104.9
1902	9.3550	118.9	.52816	70.5	.0487	107.7	30.5992	142.1	28.0000	107.4
1903	8.0200	102.0	.54208	72.4	.0558	123.5	27.9117	129.7	28.0000	107.4
1904	7.6533	97.3	.57844	77.2	.0515	113.9	22.1792	103.0	28.0000	107.4
1905	7.6200	96.9	.61008	81.5	.0592	131.0	24.0283	111.6	28.0000	107.4
1906	7.6200	96.9	.67379	90.0	.0620	137.2	27.4475	127.5	28.0000	107.4
1907	7.8400	99.7	.65979	88.1	.0617	136.5	29.2533	135.9	28.0000	107.4
1908	7.8217	99.4	.53496	71.4	.0475	105.1	26.3125	122.2	28.0000	107.4

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Metals and implements.									
	Steel sheets: black, No 27.		Tin: pig.		Tin plates: domestic, Bessemer, coke.		Tin plates: imported, Bessemer, coke.		Trowels: M. C. O., brick, 10½-inch.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per 108 lbs.[a]	Relative price.	Average price each.	Relative price.
Average, 1890-1899	[b]$0.0224	100.0	$0.1836	100.0	[c]$3.4148	100.0	[d]$4.5862	100.0	$0.3400	100.0
1890	....	....	.2121	115.5	....	....	4.7958	104.6	.3400	100.0
1891	....	....	.2025	110.3	....	....	5.3367	116.4	.3400	100.0
1892	....	....	.2037	110.9	....	....	5.3050	115.7	.3400	100.0
1893	....	....	.2002	109.0	....	....	5.3717	117.1	.3400	100.0
1894	.0235	104.9	.1812	98.7	....	....	4.8917	106.7	.3400	100.0
1895	.0244	108.9	.1405	76.5	....	....	3.8725	84.4	.3400	100.0
1896	.0215	96.0	.1330	72.4	3.4354	100.6	3.8000	82.9	.3400	100.0
1897	.0195	87.1	.1358	74.0	3.1823	93.2	3.9025	85.1	.3400	100.0
1898	.0190	84.8	.1551	84.5	2.8500	83.5	4.0000	87.2	.3400	100.0
1899	.0267	119.2	.2721	148.2	4.1913	122.7	(e)	....	.3400	100.0
1900	.0293	130.8	.3006	163.7	4.6775	137.0	(e)	....	.3400	100.0
1901	.0315	140.6	.2618	142.6	4.1900	122.7	(e)	....	.3400	100.0
1902	.0291	129.9	.2648	144.2	4.1233	120.7	(e)	....	.3400	100.0
1903	.0260	116.1	.2816	153.4	3.9400	115.4	(e)	....	.3400	100.0
1904	.0210	93.8	.2799	152.5	3.6025	105.5	(e)	....	.3400	100.0
1905	.0222	99.1	.3127	170.3	3.7067	108.5	(e)	....	.3400	100.0
1906	.0237	105.8	.3922	213.6	3.8608	113.1	(e)	....	.3400	100.0
1907	.0250	111.6	.3875	211.1	4.0900	119.8	(e)	....	.3400	100.0
1908	.0240	107.1	.2942	160.2	3.8900	113.9	(e)	....	.3400	100.0

Year.	Metals and implements.						Lumber and building materials.			
	Vises: solid box, 50-pound		Wood screws: 1-inch, No. 10, flat head.		Zinc: sheet.		Brick: common domestic.		Carbonate of lead: American, in oil.	
	Average price each.	Relative price.	Average price per gross.	Relative price.	Average price per 100 lbs.	Relative price.	Average price per M.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$3.9009	100.0	$0.1510	100.0	$5.3112	100.0	$5.5625	100.0	$0.0577	100.0
1890	4.1400	106.1	.1970	130.5	6.0542	114.0	6.5625	118.0	.0638	110.6
1891	4.1400	106.1	.2000	132.5	5.7192	107.7	5.7083	102.6	.0650	112.7
1892	4.2550	109.1	.2100	139.1	5.4900	103.4	5.7708	103.7	.0658	114.0
1893	4.1975	107.6	.2100	139.1	4.9942	94.0	5.8333	104.9	.0609	105.5
1894	4.0567	104.0	.1558	103.2	3.9500	74.4	5.0000	89.9	.0524	90.8
1895	3.7933	97.2	.1117	74.0	4.5217	85.1	5.3125	95.5	.0525	91.0
1896	3.7200	95.4	.1033	68.4	4.9400	93.0	5.0625	91.0	.0517	89.6
1897	3.5000	89.7	.0850	56.3	4.9400	93.0	4.9375	88.8	.0535	92.7
1898	3.2800	84.1	.0918	60.8	5.4983	103.5	5.7500	103.4	.0543	94.1
1899	3.9267	100.7	.1452	96.2	7.0042	131.9	5.6875	102.2	.0568	98.4
1900	4.2683	109.4	.1820	120.5	6.0950	114.8	5.2500	94.4	.0625	108.3
1901	5.0200	128.7	.1045	69.2	5.5583	104.7	5.7656	103.7	.0576	99.8
1902	5.1300	131.5	.0952	63.0	5.7308	107.9	5.3854	96.8	.0539	93.4
1903	5.1767	132.7	.1093	72.4	6.0183	113.3	5.9063	106.2	.0615	106.6
1904	4.2550	109.1	.0945	62.6	5.6092	105.6	7.4948	134.7	.0598	103.6
1905	4.1400	106.1	.1055	69.9	6.8250	128.5	8.1042	145.7	.0633	109.7
1906	4.5208	115.9	.1055	69.9	7.1725	135.0	8.5469	153.7	.0690	119.6
1907	5.7500	147.4	.1219	80.7	7.4858	140.9	6.1563	110.7	.0697	120.8
1908	[f]4.8700	[f]147.4	.1000	66.2	6.4400	121.3	5.1042	91.8	.0650	112.7

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[a] Duty paid.

[b] Average for the period July, 1894, to December, 1899.

[c] Average for 1896-1899.

[d] Average for 1890-1898.

[e] Quotations discontinued.

[f] Vises, solid box, 50-pound (price quoted by another firm). For method of computing relative price, see pages 230 and 231; average price for 1907, $4.37.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Lumber and building materials.									
	Cement: Portland, domestic.		Cement: Rosendale.		Doors, pine (Buffalo market).		Hemlock.		Lime: common.	
	Average price per barrel.	Relative price.	Average price per barrel.	Relative price.	Average price per door.	Relative price.	Average price per M feet.	Relative price.	Average price per barrel.	Relative price.
Average, 1890-1899	[a]$1.9963	100.0	$0.8871	100.0	$1.0929	100.0	$11.9625	100.0	$0.8332	100.0
1890			1.0542	118.8	1.3750	125.8	12.5833	105.2	.9792	117.5
1891			.9417	106.2	1.2500	114.4	12.4583	104.1	.9125	109.5
1892			.9688	109.2	1.2500	114.4	12.2917	102.8	.9292	111.5
1893			.8875	100.0	1.2250	112.1	12.0000	100.3	.9292	111.5
1894			.9271	104.5	1.0500	96.1	11.7083	97.9	.8479	101.8
1895	1.9688	98.6	.8521	96.1	.9125	83.5	11.1458	93.2	.7813	93.8
1896	2.0000	100.2	.8333	93.9	.8375	76.6	11.1667	93.3	.6938	83.3
1897	1.9667	98.5	.7521	84.8	.8125	74.3	11.0000	92.0	.7188	86.3
1898	1.9979	100.1	.7604	85.7	.9250	84.6	11.7500	98.2	.7417	89.0
1899	2.0479	102.6	.8938	100.8	1.2917	118.2	13.5208	113.0	.7979	95.8
1900	2.1583	108.1	1.0167	114.6	1.5900	145.5	16.5000	137.9	.6833	82.0
1901	1.8896	94.7	1.0188	114.8	1.8913	173.1	15.0000	125.4	.7742	92.9
1902	1.9500	97.7	.8646	97.5	2.1208	194.1	15.8333	132.4	.8058	96.7
1903	2.0292	101.6	.8896	100.3	1.7292	158.2	16.7917	140.4	.7875	94.5
1904	1.4604	73.2	.8021	90.4	1.6900	154.6	17.0000	142.1	.8246	99.0
1905	1.4271	71.5	.8333	93.9	[b]1.8367	[b]163.2	17.8750	149.4	.8908	106.9
1906	1.5750	78.9	.9500	107.1	[b]1.7271	[b]153.5	21.8958	183.0	.9471	113.7
1907	1.6458	82.4	.9500	107.1	[b]1.8842	[b]167.5	22.2500	186.0	.9492	113.9
1908	1.4600	73.1	.9500	107.1	[c]1.7488	[c]161.3	20.8750	174.5	1.0450	125.4

Year.	Linseed oil: raw.		Maple: hard.		Oak: white, plain.		Oak: white, quartered.		Oxide of zinc.	
	Average price per gallon.	Relative price.	Average price per M feet.	Relative price.	Average price per M feet.	Relative price.	Average price per M feet.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899	$0.4535	100.0	$26.5042	100.0	$37.4292	100.0	$53.6771	100.0	$0.0400	100.0
1890	.6158	135.8	26.5000	100.0	37.8750	101.2	51.4583	95.9	.0425	106.3
1891	.4842	106.8	26.5000	100.0	38.0000	101.5	53.5833	99.8	.0419	104.8
1892	.4083	90.0	26.5000	100.0	38.4583	102.7	53.0000	98.7	.0426	106.5
1893	.4633	102.2	26.5000	100.0	38.7500	103.5	53.0000	98.7	.0413	103.3
1894	.5242	115.6	26.5000	100.0	37.2500	99.5	51.1250	95.2	.0373	93.3
1895	.5242	115.6	26.5000	100.0	36.2500	96.8	53.2500	99.2	.0350	87.5
1896	.3683	81.2	26.5000	100.0	36.2500	96.8	54.5000	101.5	.0383	95.8
1897	.3275	72.2	26.5000	100.0	36.2500	96.8	53.8333	100.3	.0377	94.3
1898	.3925	86.5	26.5000	100.0	36.2500	96.8	52.5000	97.8	.0396	99.0
1899	.4267	94.1	26.5417	100.1	38.9583	104.1	60.5208	112.7	.0438	109.5
1900	.6292	138.7	27.5000	103.8	40.8333	109.1	64.4583	120.1	.0451	112.8
1901	.6350	140.0	26.7083	100.8	36.7708	98.2	59.1667	110.2	.0438	109.5
1902	.5933	130.8	28.5833	107.8	40.8750	109.2	63.0833	117.5	.0440	110.0
1903	.4167	91.9	31.6667	119.5	44.8333	119.8	74.7917	139.3	.0463	115.8
1904	.4158	91.7	31.0000	117.0	46.5000	124.2	80.7500	150.4	.0463	115.8
1905	.4675	103.1	30.5000	115.1	47.3333	126.5	80.2500	149.5	.0465	116.3
1906	.4050	89.3	31.0000	117.0	50.4167	134.7	79.1667	147.5	.0508	127.0
1907	.4342	95.7	32.2500	121.7	55.2083	147.5	80.0000	149.0	.0538	134.5
1908	.4375	96.5	31.6250	119.3	49.2917	131.7	80.1667	149.3	.0513	128.3

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[a] Average for 1895-1899.

[b] Doors: western white pine, 2 feet 8 inches by 6 feet 8 inches, 1⅜ inches thick, 5-panel, No. 1, O. G. For method of computing relative price, see pages 230 and 231; average price for 1904, $1.74.

[c] Doors: western white pine, 2 feet 8 inches by 6 feet 8 inches, 1⅜ inches thick, 5-panel, No. 1, O. G. (Chicago market). For method of computing relative price, see pages 230 and 231; average price for 1907, $1.8108.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Lumber and building materials.									
	Pine: white, boards, No. 2 barn (Buffalo market).		Pine: white, boards, uppers (Buffalo market).		Pine: yellow.		Plate glass: polished, 3 to 5 sq. ft.		Plate glass: polished, 5 to 10 sq. ft.	
	Average price per M feet.	Relative price.	Average price per M feet.	Relative price.	Average price per M feet.	Relative price.	Average price per sq. ft.	Relative price.	Average price per sq. ft.	Relative price.
Average, 1890-1899..	$17.1104	100.0	$46.5542	100.0	$18.4646	100.0	$0.3630	100.0	$0.5190	100.0
1890..................	16.7917	98.1	44.0833	94.7	20.7500	112.4	.5300	146.0	.7000	134.9
1891..................	17.0000	99.4	45.0000	96.7	19.9583	108.1	.5200	143.3	.6900	132.9
1892..................	17.1458	100.2	46.1417	98.9	18.5000	100.2	.4200	115.7	.5500	106.0
1893..................	18.6250	108.9	48.5000	104.2	18.5000	100.2	.4200	115.7	.5500	106.0
1894..................	18.1667	106.2	46.4167	99.7	18.5000	100.2	.3300	90.9	.4500	86.7
1895..................	17.2500	100.8	46.0000	98.8	16.9167	91.6	.3000	82.6	.4800	92.5
1896..................	16.5000	96.4	46.6250	100.2	16.4167	88.9	.3400	93.7	.5400	104.0
1897..................	15.8333	92.5	46.3333	99.5	16.4375	89.0	.2000	55.1	.3200	61.7
1898..................	15.5000	90.6	46.0833	99.0	18.6250	100.9	.2700	74.4	.4300	82.9
1899..................	18.2917	106.9	50.4583	108.4	20.0417	108.5	.3000	82.6	.4800	92.5
1900..................	21.5000	125.7	57.5000	123.5	20.7083	112.2	.3400	93.7	.5400	104.0
1901..................	20.8750	122.0	60.4167	129.8	19.6667	106.5	.3200	88.2	.4900	94.4
1902..................	23.5000	137.3	74.8333	160.7	21.0000	113.7	.2575	70.9	.4113	79.2
1903..................	24.0000	140.3	80.0000	171.8	21.0000	113.7	.2625	72.3	.4313	83.1
1904..................	23.0000	134.4	81.0000	174.0	21.4167	116.0	.2275	62.7	.3650	70.3
1905..................	24.1667	141.2	82.0000	176.1	24.9167	134.9	.2408	66.3	.3729	71.8
1906..................	29.7500	173.9	84.7500	182.0	29.3333	158.9	[a].2267	[a]76.1	[b].3300	[b]77.7
1907..................	[c]37.4167	[c]195.7	[d]97.0833	[d]200.2	30.5000	165.2	[a].2300	[a]77.2	[b].3400	[b]80.1
1908..................	[c]36.3750	[c]190.3	[d]96.0833	[d]198.1	30.5000	165.2	[a].1733	[a]58.2	[b].2750	[b]64.8

Year.	Poplar.		Putty.		Rosin: good, strained.		Shingles: cypress.		Shingles: white pine, 18-inch.	
	Average price per M feet.	Relative price.	Average price per pound.	Relative price.	Average price per barrel.	Relative price.	Average price per M.	Relative price.	Average price per M.	Relative price.
Average, 1890-1899..	$31.3667	100.0	$0.0158	100.0	$1.4399	100.0	$2.8213	100.0	$3.7434	100.0
1890..................	30.5000	97.2	.0175	110.8	1.3844	96.1	3.3500	118.7	3.8417	102.6
1891..................	30.5000	97.2	.0175	110.8	1.4740	102.4	3.2500	115.2	4.0000	106.9
1892..................	30.6042	97.6	.0161	101.9	1.3417	93.2	3.1500	111.7	3.9063	104.4
1893..................	33.6250	107.2	.0160	101.3	1.2615	87.6	3.0000	106.3	3.8500	102.8
1894..................	31.7500	101.2	.0157	99.4	1.2510	86.9	2.8000	99.2	3.7500	100.2
1895..................	31.0000	98.8	.0145	91.8	1.5615	108.4	2.6500	93.9	3.7000	98.8
1896..................	31.0000	98.8	.0145	91.8	1.7458	121.2	2.5000	88.6	3.6125	96.5
1897..................	30.6667	97.8	.0145	91.8	1.6125	112.0	2.3500	83.3	3.5417	94.6
1898..................	30.0000	95.6	.0145	91.8	1.4208	98.7	2.5000	88.6	3.5521	94.9
1899..................	34.0208	108.5	.0168	106.3	1.3458	93.5	2.6625	94.4	3.6792	98.3
1900..................	37.6875	120.2	.0190	120.3	1.6021	111.3	2.8500	101.0	4.0000	106.9
1901..................	36.7083	117.0	.0150	94.9	1.5302	106.3	2.8500	101.0	4.1875	111.9
1902..................	42.1042	134.2	.0192	121.5	1.6125	112.0	2.6708	94.7	[e]3.5875	[e]123.0
1903..................	49.6458	158.3	.0141	89.2	2.2156	153.9	2.5667	91.0	[e]3.6500	[e]125.1
1904..................	50.3292	160.5	.0110	69.6	2.8333	196.8	2.6000	92.2	[e]3.5750	[e]122.5
1905..................	48.2083	153.7	.0109	69.0	3.4229	237.7	2.7250	96.6	[e]3.5000	[e]119.9
1906..................	50.9583	162.5	.0119	75.3	4.0146	278.8	3.2417	114.9	[f]2.2125	[f]157.2
1907..................	58.0833	185.2	.0120	75.9	4.3771	304.0	4.2250	149.8	[f]2.6958	[f]191.5
1908..................	58.2917	185.8	.0120	75.9	3.2817	227.9	3.5375	125.4	[f]2.0125	[f]143.0

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[a] Plate glass: polished, glazing, area 3 to 5 square feet. For method of computing relative price, see pages 230 and 231; average price for 1905, $0.1975.

[b] Plate glass: polished, glazing, area 5 to 10 square feet. For method of computing relative price, see pages 230 and 231; average price for 1905, $0.3050.

[c] Pine: white, boards, No. 2 barn, 1-inch, 10 inches wide, rough (New York market). For method of computing relative price, see pages 230 and 231; average price for 1906, $33.25.

[d] Pine: white, boards, uppers, 1-inch, 8 inches and up wide, rough (New York market). For method of computing relative price, see pages 230 and 231; average price for 1906, $88.25.

[e] Shingles: Michigan white pine, 16 inches long, XXXX. For method of computing relative price, see pages 230 and 231; average price for 1901, $3.2625.

[f] Shingles: red cedar, clears, random width, 16 inches long. For method of computing relative price, see pages 230 and 231; average price for 1905, $1.6875.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Lumber and building materials.									
	Spruce.		Tar.		Turpentine: spirits of.		Window glass: American, single, firsts, 6 x 8 to 10 x 15 inches.		Window glass: American, single, thirds, 6 x 8 to 10 x 15 inches.	
	Average price per M feet.	Relative price.	Average price per barrel.	Relative price.	Average price per gallon.	Relative price.	Average price per 50 sq. ft.	Relative price.	Average price per 50 sq. ft.	Relative price.
Average, 1890-1899	$14.3489	100.0	$1.2048	100.0	$0.3343	100.0	$2.1514	100.0	$1.8190	100.0
1890	16.2917	113.5	1.4750	122.4	.4080	122.0	2.2283	103.6	1.7858	98.2
1891	14.2183	99.1	1.5833	131.4	.3795	113.5	2.2125	102.8	1.7700	97.3
1892	14.8542	103.5	1.3000	107.9	.3227	96.5	1.9935	92.7	1.5948	87.7
1893	13.7708	96.0	1.0458	86.8	.3002	89.8	2.1375	99.4	1.7100	94.0
1894	12.7083	88.6	1.0917	90.6	.2932	87.7	1.9918	92.6	1.6326	89.8
1895	14.2500	99.3	1.1417	94.8	.2923	87.4	1.5988	74.3	1.3919	76.5
1896	14.2500	99.3	1.0125	84.0	.2743	82.1	1.8021	83.8	1.6000	88.0
1897	14.0000	97.6	1.0542	87.5	.2924	87.5	2.1986	102.2	1.9630	107.9
1898	13.7500	95.8	1.0979	91.1	.3221	96.4	2.6432	122.9	2.3428	128.8
1899	15.3958	107.3	1.2458	103.4	.4581	137.0	2.7081	125.9	2.3986	131.9
1900	17.3750	121.1	1.3625	113.1	.4771	142.7	2.6990	125.5	2.3194	127.5
1901	18.0000	125.4	1.2817	106.4	.3729	111.5	4.1282	191.9	3.2823	180.4
1902	19.2500	134.2	1.3250	110.0	.4740	141.8	3.2187	149.6	2.5649	141.0
1903	19.1875	133.7	1.6792	139.4	.5715	171.0	2.6400	122.7	2.1600	118.7
1904	20.5000	142.9	1.6792	139.4	.5757	172.2	2.8867	134.2	2.3283	128.0
1905	21.4167	149.3	1.7583	145.9	.6276	187.7	2.7637	128.5	2.1365	117.5
1906	25.5417	178.0	1.9583	162.5	.6649	198.9	2.9196	135.7	2.2563	124.0
1907	24.0000	167.3	2.3292	193.3	.6344	189.8	2.8133	130.8	2.2419	123.2
1908	20.7917	144.9	1.6000	132.8	.4533	135.6	2.3600	109.7	1.8806	103.4

Year.	Drugs and chemicals.							
	Alcohol: grain.		Alcohol: wood, refined, 95 per cent.		Alum: lump.		Brimstone: crude, seconds.	
	Average price per gallon.	Relative price.	Average price per gallon.	Relative price.	Average price per pound.	Relative price.	Average price per ton.	Relative price.
Average, 1890-1899	$2.2405	100.0	$0.9539	100.0	$0.0167	100.0	$20.6958	100.0
1890	2.0717	92.5	1.1375	119.2	.0182	109.0	21.1458	102.2
1891	2.2150	98.9	1.1598	121.6	.0158	94.6	28.6042	138.2
1892	2.1417	95.6	1.2973	136.0	.0160	95.8	24.1458	116.7
1893	2.1808	97.3	1.2917	135.4	.0174	104.2	18.7292	90.5
1894	2.1521	96.1	.7198	75.5	.0169	101.2	16.5833	80.1
1895	2.3292	104.0	.8667	90.9	.0160	95.8	15.6250	75.5
1896	2.3008	102.7	.8500	89.1	.0164	98.2	17.9583	86.8
1897	2.2767	101.6	.6958	72.9	.0166	99.4	20.1250	97.2
1898	2.3250	103.8	.7500	78.6	.0165	98.8	22.9167	110.7
1899	2.4117	107.6	.7708	80.8	.0168	100.6	21.1250	102.1
1900	2.3867	106.5	.8000	83.9	.0175	104.8	21.1458	102.2
1901	2.4583	109.7	.6125	64.2	.0175	104.8	22.0000	106.3
1902	2.4057	107.4	.6417	67.3	.0175	104.8	23.4375	113.2
1903	2.3958	106.9	.5917	62.0	.0173	103.6	22.3333	107.9
1904	2.4325	108.6	.5875	61.6	.0175	104.8	21.7750	105.2
1905	2.4275	108.3	.6750	70.8	.0175	104.8	21.2667	102.8
1906	2.4642	110.0	.7000	73.4	.0175	104.8	22.1563	107.1
1907	2.5229	112.6	.3992	41.8	.0175	104.8	21.4983	103.9
1908	2.6367	117.7	.4275	44.8	.0175	104.8	21.7917	105.3

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	Drugs and chemicals.							
	Glycerin: refined.		Muriatic acid: 20°.		Opium: natural, in cases.		Quinine: American.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per ounce.	Relative price.
Average, 1890-1899...	$0.1399	100.0	$0.0104	100.0	$2.3602	100.0	$0.2460	100.0
1890....................	.1767	126.3	.0104	100.0	2.6208	111.0	.3275	133.1
1891....................	.1538	109.9	.0098	94.2	1.9438	82.4	.2508	102.0
1892....................	.1396	99.8	.0121	116.3	1.6708	70.8	.2183	88.7
1893....................	.1346	96.2	.0101	97.1	2.3917	101.3	.2150	87.4
1894....................	.1194	85.3	.0088	84.6	2.2854	96.8	.2621	106.5
1895....................	.1204	86.1	.0083	79.8	1.8413	78.0	.2508	102.0
1896....................	.1671	119.4	.0075	72.1	2.0917	88.6	.2406	97.8
1897....................	.1308	93.5	.0109	104.8	2.3417	99.2	.1829	74.3
1898....................	.1238	88.5	.0128	123.1	3.3417	141.6	.2146	87.2
1899....................	.1329	95.0	.0135	129.8	3.0729	130.2	.2975	120.9
1900....................	.1515	108.3	.0135	129.8	3.2000	135.6	.3325	135.2
1901....................	.1504	107.5	.0150	144.2	3.2292	136.8	.3025	123.0
1902....................	.1444	103.2	.0168	161.5	2.8313	120.0	.2575	104.7
1903....................	.1446	103.4	.0160	153.8	3.0813	130.6	.2525	102.6
1904....................	.1396	99.8	.0160	153.8	2.7500	116.5	.2333	94.8
1905....................	.1238	88.5	.0160	153.8	3.0333	128.5	.2100	85.4
1906....................	.1129	80.7	.0135	129.8	2.9500	125.0	.1658	67.4
1907....................	.1383	98.9	.0135	129.8	4.9458	209.6	.1775	72.2
1908....................	.1492	106.6	.0135	129.8	4.7146	199.8	.1567	63.7

Year.	Drugs, etc.		House furnishing goods.					
	Sulphuric acid: 66°.		Earthenware: plates, cream-colored.		Earthenware: plates, white granite.		Earthenware: teacups and saucers, white granite.	
	Average price per pound.	Relative price.	Average price per dozen.	Relative price.	Average price per dozen.	Relative price.	Average price per gross (6 dozen cups and 6 dozen saucers).	Relative price.
Average, 1890-1899...	$0.0089	100.0	$0.4136	100.0	$0.4479	100.0	$3.4292	100.0
1890....................	.0088	98.9	.4465	108.0	.4888	109.1	3.7600	109.6
1891....................	.0081	91.0	.4367	105.6	.4786	106.9	3.6817	107.4
1892....................	.0095	106.7	.4230	102.3	.4644	103.7	3.5720	104.2
1893....................	.0085	95.5	.4230	102.3	.4644	103.7	3.5720	104.2
1894....................	.0073	82.0	.4177	101.0	4566	101.9	3.5250	102.8
1895....................	.0070	78.7	.3913	94.6	.4162	92.9	3.2374	94.4
1896....................	.0070	78.7	.3807	92.0	.3991	89.1	3.0907	90.1
1897....................	.0095	106.7	.3807	92.0	.3991	89.1	3.0907	90.1
1898....................	.0113	127.0	.4153	100.4	.4515	100.8	3.3595	98.0
1899....................	.0120	134.8	.4208	101.7	.4607	102.9	3.4026	99.2
1900....................	.0120	134.8	.4410	106.6	.4841	108.1	3.5750	104.3
1901....................	.0125	140.4	.4655	112.5	.5096	113.8	3.7632	109.7
1902....................	.0130	146.1	.4655	112.5	.5096	113.8	3.7632	109.7
1903....................	.0127	142.7	.4775	115.4	.4988	111.4	3.6832	107.4
1904....................	.0129	144.9	.4705	113.8	.4943	110.4	3.6503	106.4
1905....................	.0124	139.3	.4410	106.6	.4586	102.4	3.3869	98.8
1906....................	.0100	112.4	.4410	106.6	.4586	102.4	3.3869	98.8
1907....................	.0100	112.4	.4410	106.6	.4586	102.4	3.3869	98.8
1908....................	.0102	114.6	.4300	104.0	.4586	102.4	3.3869	98.8

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	House furnishing goods.							
	Furniture: bedroom sets, ash.		Furniture: chairs, bedroom, maple.		Furniture: chairs, kitchen.		Furniture: tables, kitchen.	
	Average price per set.	Relative price.	Average price per dozen.	Relative price.	Average price per dozen.	Relative price.	Average price per dozen.	Relative price.
Average, 1890-1899	$10.555	100.0	$6.195	100.0	$3.8255	100.0	$14.435	100.0
1890	12.000	113.7	7.000	113.0	4.2000	109.8	15.000	103.9
1891	12.000	113.7	7.000	113.0	4.2000	109.8	15.000	103.9
1892	12.000	113.7	6.850	110.6	4.2500	111.1	15.000	103.9
1893	11.000	104.2	6.850	110.6	4.2500	111.1	15.000	103.9
1894	11.000	104.2	6.000	96.9	3.5000	91.5	14.250	98.7
1895	9.950	94.3	6.000	96.9	3.5000	91.5	14.250	98.7
1896	8.750	82.9	6.000	96.9	3.5000	91.5	13.800	95.6
1897	8.750	82.9	5.000	80.7	3.5000	91.5	13.800	95.6
1898	10.000	94.7	5.125	82.7	3.3130	86.6	13.800	95.6
1899	10.100	95.7	6.125	98.9	4.0420	105.7	14.450	100.1
1900	11.250	106.6	8.000	129.1	5.2080	136.1	15.600	108.1
1901	11.250	106.6	7.000	113.0	4.7500	124.2	15.600	108.1
1902	11.750	111.3	7.833	118.4	4.9167	128.5	15.600	108.1
1903	12.167	115.3	7.917	127.8	5.0000	130.7	15.600	108.1
1904	12.250	116.1	8.000	129.1	4.7708	124.7	15.600	108.1
1905	12.354	117.0	8.000	129.1	4.7500	124.2	15.600	108.1
1906	12.958	122.8	8.917	143.9	5.1250	134.0	16.500	114.3
1907	14.500	137.4	10.000	161.4	5.7917	151.4	18.000	124.7
1908	[a] 11.000	[a] 134.3	9.417	152.0	6.0000	156.8	18.000	124.7

Year.	Glassware: nappies, 4-inch.		Glassware: pitchers, ½-gallon, common.		Glassware: tumblers, ½-pint, common.		Table cutlery: carvers, stag handles.	
	Average price per dozen.	Relative price.	Average price per dozen.	Relative price.	Average price per dozen.	Relative price.	Average price per pair.	Relative price.
Average, 1890-1899	$0.112	100.0	$1.175	100.0	$0.1775	100.0	$0.80	100.0
1890	.120	107.1	1.250	106.4	.1800	101.4	.80	100.0
1891	.120	107.1	1.250	106.4	.2000	112.7	.80	100.0
1892	.120	107.1	1.250	106.4	.1900	107.0	.80	100.0
1893	.120	107.1	1.250	106.4	.1900	107.0	.95	118.8
1894	.120	107.1	1.250	106.4	.1900	107.0	.80	100.0
1895	.120	107.1	1.250	106.4	.1850	104.2	.80	100.0
1896	.100	89.3	1.250	106.4	.1800	101.4	.80	100.0
1897	.100	89.3	1.000	85.1	.1700	95.8	.75	93.8
1898	.100	89.3	1.000	85.1	.1600	90.1	.75	93.8
1899	.100	89.3	1.000	85.1	.1300	73.2	.75	93.8
1900	.100	89.3	1.000	85.1	.1800	101.4	.75	93.8
1901	.140	125.0	1.300	110.6	.1800	101.2	.75	93.8
1902	.140	125.0	1.300	110.6	.1850	104.2	.75	93.8
1903	.140	125.0	1.300	110.6	.1767	99.5	.75	93.8
1904	.140	125.0	1.150	97.9	.1600	90.1	.75	93.8
1905	.140	125.0	1.050	89.4	.1500	84.5	.75	93.8
1906	.140	125.0	1.050	89.4	.1500	84.5	.75	93.8
1907	.140	125.0	1.050	89.4	.1500	84.5	.80	100.0
1908	.122	108.9	.963	82.0	.1325	74.6	.75	93.8

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[a] Furniture: bedroom sets, iron bedstead, hardwood dresser and washstand. For method of computing relative price, see pages 230 and 231; average price for 1907, $11.25.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Continued.

Year.	House furnishing goods.						Miscellaneous.	
	Table cutlery: knives and forks, cocobolo handles.		Wooden ware: pails, oak-grained.		Wooden ware: tubs, oak-grained.		Cotton-seed meal.	
	Average price per gross.	Relative price.	Average price per dozen.	Relative price.	Average price per nest of 3.	Relative price.	Average price per ton of 2,000 pounds.	Relative price.
Average, 1890-1899..	$6.0600	100.0	$1.2988	100.0	$1.3471	100.0	$21.9625	100.0
1890..................	7.7500	127.9	1.5917	122.6	1.6500	122.5	23.3750	100.4
1891..................	7.7500	127.9	1.4500	111.6	1.5667	116.3	25.2083	114.8
1892..................	6.8500	113.0	1.3500	103.9	1.4000	103.9	23.6958	107.9
1893..................	5.5000	90.8	1.3125	101.1	1.3083	97.1	25.7042	117.0
1894..................	5.5000	90.8	1.2583	96.9	1.2875	95.6	22.5583	102.7
1895..................	5.5000	90.8	1.1208	86.3	1.2500	92.8	18.9125	86.1
1896..................	5.5000	90.8	1.2625	97.2	1.2500	92.8	19.9375	90.8
1897..................	5.0000	82.5	1.2417	95.6	1.2500	92.8	20.4375	93.1
1898..................	5.5000	90.8	1.1333	87.3	1.2500	92.8	19.0000	86.5
1899..................	5.7500	94.9	1.2667	97.5	1.2583	93.4	20.7958	94.7
1900..................	5.7500	94.9	1.4917	114.9	1.4417	107.0	25.5458	116.3
1901..................	6.5000	107.3	1.5500	119.3	1.4500	107.6	25.0208	113.9
1902..................	6.5000	107.3	1.5500	119.3	1.4500	107.6	27.1333	123.5
1903..................	6.5000	107.3	1.5875	122.2	1.4500	107.6	26.7083	121.6
1904..................	6.6667	110.0	1.7000	130.9	1.4500	107.6	26.2000	119.3
1905..................	6.6875	110.4	1.7000	130.9	1.4500	107.6	26.3583	120.0
1906..................	6.0500	99.8	1.7000	130.9	1.4500	107.6	30.3917	138.4
1907..................	6.4833	107.0	1.9708	151.7	1.6000	118.8	28.7042	130.7
1908..................	5.4167	89.4	2.1000	161.7	1.6500	122.5	29.3917	133.8

Year.	Miscellaneous.							
	Cotton-seed oil: summer yellow, prime.		Jute: raw.		Malt: western made.		Paper: news.	
	Average price per gallon.	Relative price.	Average price per pound.	Relative price.	Average price per bushel.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899..	$0.3044	100.0	$0.0359	100.0	$0.7029	100.0	$0.0299	100.0
1890..................	.3446	113.2	.0388	108.1	.7500	106.7	.0382	127.8
1891..................	.3567	117.2	.0371	103.3	.9271	131.9	.0340	113.7
1892..................	.3088	101.4	.0475	132.3	.8015	114.0	.0340	113.7
1893..................	.4550	149.5	.0346	96.4	.7750	110.3	.0318	106.4
1894..................	.3238	106.4	.0345	96.1	.7446	105.9	.0323	108.0
1895..................	.2721	89.4	.0279	77.7	.6854	97.5	.0308	103.0
1896..................	.2513	82.6	.0319	88.9	.5629	80.1	.0275	92.0
1897..................	.2365	77.7	.0373	103.9	.5438	77.4	.0271	90.6
1898..................	.2288	75.2	.0332	92.5	.6163	87.7	.0219	73.2
1899..................	.2663	87.5	.0365	101.7	.6221	88.5	.0209	69.9
1900..................	.3556	116.8	.0435	121.2	.6538	93.0	.0281	94.0
1901..................	.3571	117.3	.0400	111.4	.7450	106.0	.0226	75.6
1902..................	.4067	133.6	.0438	122.0	.7925	112.7	.0242	80.9
1903..................	.3977	130.7	.0464	129.2	.7246	103.1	.0253	84.6
1904..................	.3135	103.0	.0444	123.7	.6758	96.1	.0267	89.3
1905..................	.2696	88.6	[a].0398	[a]151.0	.6150	87.5	.0242	80.9
1906..................	.3613	118.7	[a].0539	[a]204.5	.6471	92.1	.0219	73.2
1907..................	.4869	160.0	[a].0486	[a]184.4	1.0346	147.2	.0249	83.3
1908..................	.4090	134.4	[a].0370	[a]140.4	.9325	132.7	.0248	82.9

[a] Jute: raw, M-double triangle, shipments. For method of computing relative price, see pages 230 and 231; average price for 1904, $0.0326.

TABLE IV.—AVERAGE YEARLY ACTUAL AND RELATIVE PRICES OF COMMODITIES, 1890 TO 1908, AND BASE PRICES (AVERAGE FOR 1890-1899)—Concluded.

Year.	Miscellaneous.							
	Paper: wrapping, manila.		Proof spirits.		Rope: manila, $\frac{1}{2}$-inch.		Rubber: Para Island.	
	Average price per pound.	Relative price.	Average price per gallon.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899..	$0.0553	100.0	$1.1499	100.0	$0.0934	100.0	$0.8007	100.0
1890	.0575	104.0	1.0533	91.6	.1494	160.0	.8379	104.6
1891	.0575	104.0	1.1052	96.1	.1038	111.1	.7908	98.8
1892	.0558	100.9	1.0757	93.5	.1148	122.9	.6763	84.5
1893	.0579	104.7	1.0713	93.2	.0919	98.4	.7167	89.5
1894	.0584	105.6	1.1326	98.5	.0770	82.4	.6744	84.2
1895	.0586	106.0	1.2109	105.3	.0735	78.7	.7425	92.7
1896	.0588	106.3	1.2031	104.6	.0664	71.1	.8000	99.9
1897	.0588	106.3	1.1830	102.9	.0631	67.6	.8454	105.6
1898	.0459	83.0	1.2220	106.3	.0842	90.1	.9271	115.8
1899	.0438	79.2	1.2421	108.0	.1094	117.1	.9954	124.3
1900	.0480	86.8	1.2460	108.4	.1320	141.3	.9817	122.6
1901	.0502	90.8	1.2861	111.8	.1092	116.9	.8496	106.1
1902	.0497	89.9	1.3138	114.3	.1348	144.3	.7273	90.8
1903	.0526	95.1	1.2809	111.4	[a] .1146	[a] 122.7	.9054	113.1
1904	.0530	95.8	1.2692	110.4	[a] .1171	[a] 125.4	1.0875	135.8
1905	.0525	94.9	1.2616	109.7	[a] .1195	[a] 127.9	1.2425	155.2
1906	.0500	90.4	1.2879	112.0	[a] .1252	[a] 134.0	1.2131	151.5
1907	.0506	91.5	1.3133	114.2	[a] .1290	[a] 138.1	1.0633	132.8
1908	.0500	90.4	1.3565	118.0	[b] .1015	[b] 108.7	.8708	108.8

Year.	Soap: castile, mottled, pure.		Starch: laundry.		Tobacco: plug.		Tobacco: smoking, gran., Seal of N. C.	
	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.	Average price per pound.	Relative price.
Average, 1890-1899..	$0.0569	100.0	$0.0348	100.0	$0.3962	100.0	$0.5090	100.0
1890	.0594	104.4	.0371	106.6	.4050	102.2	.5000	98.2
1891	.0621	109.1	.0426	122.4	.4008	101.2	.5000	98.2
1892	.0624	109.7	.0373	107.2	.3725	94.0	.5000	98.2
1893	.0615	108.1	.0366	105.2	.3967	100.1	.5000	98.2
1894	.0588	103.3	.0366	105.2	.4000	101.0	.5000	98.2
1895	.0507	89.1	.0363	104.3	.4000	101.0	.5000	98.2
1896	.0502	88.2	.0310	89.1	.3808	96.1	.5000	98.2
1897	.0531	93.3	.0300	86.2	.3758	94.9	.5000	98.2
1898	.0550	96.7	.0300	86.2	.4133	104.3	.5300	104.1
1899	.0558	98.1	.0300	86.2	.4175	105.4	.5600	110.0
1900	.0613	107.7	.0340	97.7	.4433	111.9	.5600	110.0
1901	.0655	115.1	.0363	104.3	.4658	117.6	.5600	110.0
1902	.0663	116.5	.0454	130.5	.4542	114.6	.5592	109.9
1903	.0658	115.6	.0431	123.9	.4500	113.6	.5700	112.0
1904	.0647	113.7	.0369	106.0	.4700	118.6	.5825	114.4
1905	.0650	114.2	.0329	94.5	.4900	123.7	.6000	117.9
1906	.0650	114.2	.0367	105.5	.4833	122.0	.6000	117.9
1907	.0671	117.9	.0404	116.1	.4700	118.6	.6000	117.9
1908	.0700	123.0	.0433	124.4	.4700	118.6	.6000	117.9

[a] $\frac{7}{16}$-inch.

[b] Base sizes.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908.

[For explanation and discussion of this table, see pages 239 to 248. Average price for 1890-1899=100.0.]

Year.	Farm products.										
	Cotton: upland, middling.	Flaxseed: No. 1.	Grain.						Hay: timothy, No. 1.	Hides: green, salted, packers', heavy native steers.	Hops: New York State, choice.
			Barley: by sample.	Corn: cash.	Oats: cash.	Rye: No. 2, cash.	Wheat: cash.	Average.			
1890....	142.9	125.5	111.6	103.8	115.6	103.0	118.9	110.6	95.8	99.6	148.0
1891....	110.8	97.1	134.5	151.0	144.1	157.6	128.1	143.0	117.8	101.5	149.1
1892....	99.0	91.4	112.2	118.3	113.2	127.7	104.9	115.3	113.5	92.8	141.4
1893....	107.2	97.7	103.3	104.2	105.2	92.6	90.1	99.1	107.4	79.9	128.2
1894....	90.2	121.6	113.2	113.7	115.7	88.1	74.4	101.0	99.9	68.4	85.5
1895....	94.0	111.8	94.8	104.0	88.3	91.2	79.9	91.6	109.1	109.7	53.1
1896....	102.0	72.9	65.7	67.8	67.0	66.5	85.4	70.5	99.0	86.6	49.5
1897....	92.2	78.1	71.2	66.9	67.9	74.9	105.8	77.3	80.9	106.3	65.5
1898....	76.9	99.8	95.9	82.6	91.9	93.8	117.8	96.4	79.9	122.8	91.5
1899....	84.7	104.0	97.6	87.6	91.2	104.4	94.7	95.1	96.6	131.8	88.3
1900....	123.8	145.7	106.2	100.2	84.5	97.9	93.7	96.5	110.9	127.4	83.7
1901....	111.1	145.8	129.8	130.6	118.3	100.8	95.7	115.0	123.0	132.0	97.1
1902....	115.1	135.0	139.4	156.9	147.3	102.5	98.7	129.0	120.9	142.8	134.1
1903....	144.7	94.1	121.2	121.1	131.7	97.5	105.1	115.3	119.2	124.8	159.5
1904....	155.0	99.6	116.9	132.6	135.8	133.4	138.3	131.4	112.5	124.4	196.2
1905....	123.1	107.6	107.0	131.7	111.2	134.5	134.5	123.8	107.9	152.6	150.9
1906....	142.0	99.1	112.8	121.8	122.1	115.5	105.6	115.6	124.3	164.7	92.0
1907....	153.0	106.1	169.0	138.8	167.4	145.4	120.8	148.3	162.4	155.3	98.1
1908....	134.8	108.0	161.8	179.9	189.5	148.0	131.8	163.0	118.3	142.6	67.1

Year.	Live stock.										Average, farm products.
	Cattle.			Hogs.			Sheep.			Average.	
	Steers, choice to extra.	Steers, good to choice.	Average.	Heavy.	Light.	Average.	Native.	Western.	Average.		
1890....	91.5	87.4	89.5	89.6	88.8	89.2	120.5	118.0	119.3	99.3	110.0
1891....	110.6	107.7	109.2	100.2	98.2	99.2	120.0	115.6	117.8	108.7	121.5
1892....	95.7	95.0	95.4	116.8	114.6	115.7	127.2	123.2	125.2	112.1	111.7
1893....	103.8	102.2	103.0	148.4	148.7	148.6	103.2	104.3	103.8	118.4	107.9
1894....	97.0	95.6	96.3	112.7	111.6	112.2	71.7	75.4	73.6	94.0	95.9
1895....	103.1	104.2	103.7	97.0	96.2	96.6	78.5	78.3	78.4	92.9	93.3
1896....	86.4	90.2	88.3	76.1	80.5	78.3	78.0	79.4	78.7	81.8	78.3
1897....	98.2	100.8	99.5	81.4	84.2	82.8	93.1	95.3	94.2	92.2	85.2
1898....	101.1	103.2	102.2	86.2	85.0	85.6	104.4	105.3	104.9	97.5	96.1
1899....	112.6	113.7	113.2	91.5	92.1	91.8	103.3	105.2	104.3	103.1	100.0
1900....	108.7	113.9	111.3	115.2	115.7	115.5	109.7	114.3	112.0	112.9	109.5
1901....	115.1	118.1	116.6	135.0	133.9	134.5	89.2	94.7	92.0	114.3	116.9
1902....	140.4	138.5	139.5	158.0	152.4	155.2	100.6	105.7	103.2	132.6	130.5
1903....	104.7	106.9	105.8	137.3	137.0	137.2	98.7	98.0	98.4	113.8	118.8
1904....	112.0	109.7	110.9	116.8	116.5	116.7	110.3	107.8	109.1	112.2	126.2
1905....	112.2	110.2	111.3	119.9	120.4	120.2	134.5	128.5	131.5	121.0	124.2
1906....	115.2	113.1	114.2	141.3	143.1	142.2	131.7	133.5	132.6	129.7	123.6
1907....	123.0	122.8	122.9	137.8	140.6	139.2	130.3	123.5	126.9	129.7	137.1
1908....	128.1	126.7	127.4	131.4	127.5	129.5	[a] 112.3	[b] 109.6	111.0	[c] 122.3	[d] 133.1

[a] Sheep, wethers, good to fancy. For method of computing relative price, see pages 230 and 231.
[b] Sheep, wethers, plain to choice. For method of computing relative price, see pages 230 and 231.
[c] Including horses and mules. See explanation, page 231.
[d] Including horses, mules, poultry, and tobacco. See explanation, page 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Food, etc.								
	Beans: medium choice.	Bread.							
		Crackers.			Loaf.				Average
		Boston.	Soda.	Average.	Washington market.	Home-made (N. Y. market).	Vienna (N. Y. market).	Average.	
1890....	121.5	104.0	111.4	107.7	100.6	100.9	101.1	100.9	103.6
1891....	134.9	104.0	111.4	107.7	100.6	100.9	101.1	100.9	103.6
1892....	112.0	102.2	106.3	104.3	100.6	100.9	101.1	100.9	102.2
1893....	119.2	96.6	104.5	100.6	100.6	100.9	101.1	100.9	100.7
1894....	110.6	96.6	101.0	98.8	100.6	100.9	101.1	100.9	100.0
1895....	107.2	97.2	94.0	95.6	94.1	100.9	101.1	98.7	97.5
1896....	70.3	96.6	91.6	94.1	102.5	90.5	90.6	94.5	94.4
1897....	62.6	88.0	82.5	85.3	100.6	100.9	101.1	100.9	94.6
1898....	74.7	108.9	105.6	107.3	100.6	100.9	101.1	100.9	103.4
1899....	87.0	105.9	92.3	99.1	100.6	100.9	101.1	100.9	100.2
1900....	125.6	111.4	94.0	102.7	100.6	100.9	101.1	100.9	101.6
1901....	131.3	118.9	97.5	108.2	100.6	100.9	101.1	100.9	103.8
1902....	115.0	118.9	97.5	108.2	100.6	100.9	101.1	100.9	103.8
1903....	135.5	112.6	90.0	101.3	100.6	100.9	101.1	100.9	101.0
1904....	120.4	115.2	91.6	103.4	102.5	110.4	105.1	106.0	105.0
1905....	128.8	132.5	95.1	113.8	100.6	118.6	113.6	110.9	112.1
1906....	113.8	133.7	90.5	112.1	100.6	118.6	113.6	110.9	111.4
1907....	106.4	133.7	90.5	112.1	100.6	118.6	113.6	110.9	111.4
1908....	138.9	[a] 133.7	90.5	112.1	100.6	126.2	117.3	114.5	113.6

Year.	Butter.				Cheese: New York, full cream.	Coffee: Rio No. 7.	Eggs: new-laid, fancy, near-by.	Fish.				
	Creamery, Elgin (Elgin market).	Creamery, extra (New York market).	Dairy, New York State.	Average.				Cod, dry, bank, large.	Herring.	Mackerel, salt, large No. 3s.	Salmon, canned.	Average.
1890....	103.1	101.5	96.5	100.4	97.1	136.6	99.1	101.7	93.3	129.2	111.4	108.9
1891....	115.3	115.3	117.6	116.1	102.4	127.3	110.0	120.5	124.6	108.4	101.8	113.8
1892....	116.5	116.5	116.1	116.4	107.2	108.9	110.4	126.3	77.8	92.0	100.7	99.2
1893....	118.9	120.5	124.6	121.3	109.0	131.2	114.5	114.2	101.0	92.0	101.4	102.2
1894....	101.1	102.1	103.3	102.2	107.4	126.0	93.5	106.7	89.9	78.2	96.7	92.9
1895....	95.1	95.3	93.0	94.5	94.1	121.2	102.0	98.9	83.6	110.6	102.1	98.8
1896....	82.6	82.1	82.3	82.3	92.0	93.9	88.7	75.4	88.8	98.5	105.2	92.0
1897....	84.7	84.5	83.2	84.1	98.1	60.4	87.5	80.9	96.3	86.5	90.8	88.6
1898....	86.9	87.2	86.4	86.8	83.3	48.2	92.6	83.6	111.4	96.7	86.0	94.4
1899....	95.6	94.8	97.1	95.8	108.9	46.0	101.6	92.0	133.2	107.9	103.8	109.2
1900....	100.4	100.1	104.5	101.7	114.3	62.6	100.7	94.9	134.6	98.3	120.2	112.0
1901....	97.4	96.5	99.2	97.7	102.4	49.2	106.7	107.2	131.9	76.6	116.3	108.0
1902....	111.2	110.6	114.5	112.1	114.1	44.6	122.7	91.2	129.9	97.3	109.6	107.0
1903....	106.1	104.7	106.2	105.7	123.3	42.6	123.2	105.0	151.7	123.5	110.0	122.6
1904....	100.4	97.6	97.3	98.4	103.2	59.6	135.0	130.4	144.4	102.6	117.1	123.6
1905....	111.9	111.0	115.6	112.8	122.8	63.4	138.2	132.4	158.9	98.5	115.7	126.4
1906....	113.3	111.0	114.9	113.1	133.0	61.8	133.2	136.2	168.0	104.7	114.3	130.8
1907....	127.2	126.2	132.0	128.5	143.3	50.1	141.2	138.6	162.9	98.5	113.2	128.3
1908....	124.1	120.9	121.0	122.1	138.2	47.8	142.0	130.7	160.1	80.4	130.4	124.9

[a] Crackers, oyster. For method of computing relative price, see pages 230 and 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 to 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Food, etc.								
	Flour.						Fruit.		
			Wheat.				Apples.		
	Buckwheat.	Rye.	Spring patents.	Winter straights.	Average.	Average.	Evaporated, choice.	Sun-dried.	Average.
1890....	104.0	101.4	120.7	121.0	120.9	111.8	134.1	134.0	134.1
1891....	125.7	148.3	123.5	127.6	125.6	131.3	129.9	160.2	145.1
1892....	92.1	121.1	101.1	107.2	104.2	105.4	81.2	82.1	81.7
1893....	121.9	93.0	93.2	85.4	89.3	98.4	109.4	98.6	104.0
1894....	125.4	83.8	83.7	71.5	77.6	91.1	128.9	122.5	125.7
1895....	86.2	94.5	84.8	84.0	84.4	87.4	80.0	93.4	86.7
1896....	71.1	80.9	88.3	94.1	91.2	83.6	62.9	60.6	61.8
1897....	75.4	84.6	106.8	113.4	110.1	95.1	65.5	51.8	58.7
1898....	79.8	92.9	110.1	107.8	109.0	97.7	105.1	77.3	91.2
1899....	118.4	99.4	87.8	88.0	87.9	98.4	102.6	118.4	110.5
1900....	108.3	103.3	89.4	87.1	88.3	97.0	72.6	86.0	79.3
1901....	108.4	100.1	88.7	86.0	87.4	95.8	83.7	79.6	81.7
1902....	115.1	103.9	88.6	90.7	89.7	99.6	108.7	98.4	103.6
1903....	119.5	94.9	100.8	93.4	97.1	102.2	72.1	83.9	78.0
1904....	120.1	131.1	125.2	125.5	125.4	125.5	71.2	64.7	68.0
1905....	112.7	134.7	126.2	118.1	122.2	122.9	82.5	67.6	75.1
1906....	115.0	115.9	99.5	94.0	96.8	106.1	115.5	103.3	109.4
1907....	132.4	138.7	113.5	103.7	108.6	122.1	99.5	123.9	111.7
1908....	156.1	142.8	126.1	111.6	118.8	134.2	101.9	(a)	101.9

Year.	Fruit.				Glucose.(b)	Lard: prime contract.	Meal: corn.		
	Currants, in barrels.	Prunes, California, in boxes.	Raisins, California, London layer.	Average.			Fine white.	Fine yellow.	Average.
1890....	127.5	138.0	157.3	138.2	....	96.8	101.2	100.3	100.8
1891....	113.6	129.2	120.1	130.6	....	100.9	140.6	143.4	142.0
1892....	79.2	128.6	97.9	93.8	....	117.9	113.7	114.2	114.0
1893....	72.0	134.2	113.3	105.5	124.3	157.5	105.0	106.5	105.8
1894....	46.1	95.0	76.9	93.9	111.4	118.2	106.7	104.5	105.6
1895....	67.7	86.0	95.2	84.5	109.2	99.8	102.2	104.4	103.3
1896....	87.2	75.1	67.9	70.7	81.7	71.7	77.5	77.2	77.4
1897....	127.7	70.5	93.2	81.7	86.0	67.4	77.8	75.1	76.5
1898....	154.7	70.3	92.7	100.0	91.8	84.4	84.1	83.2	83.7
1899....	125.3	73.0	85.5	101.0	95.6	85.0	91.1	91.2	91.2
1900....	192.0	67.4	101.3	103.9	104.9	105.5	96.5	97.4	97.0
1901....	221.6	67.8	96.1	109.8	116.0	135.3	114.2	116.8	115.5
1902....	131.7	71.2	112.3	104.5	153.6	161.9	146.4	150.0	148.2
1903....	126.9	62.1	96.3	88.3	129.7	134.1	123.7	125.7	124.7
1904....	130.1	59.6	98.2	96.0	126.3	111.8	127.8	131.1	129.5
1905....	130.7	59.3	79.1	83.8	125.1	113.9	126.4	130.3	128.4
1906....	163.7	83.5	106.6	117.9	142.9	135.6	120.8	124.2	122.5
1907....	187.5	76.6	108.4	119.2	159.4	140.7	129.5	133.5	131.5
1908....	162.4	77.3	120.6	119.5	186.2	138.8	154.0	158.8	156.4

a Quotations discontinued.

b Average for 1893-1899=100.0.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Food, etc.										
	Meat.										
	Beef.				Pork.						
	Fresh, native sides.	Salt, extra mess.	Salt, hams, western.	Average.	Bacon, short clear sides.	Bacon, short rib sides.	Hams, smoked.	Salt, mess, old to new.	Average.	Mutton, dressed.	Average.
1890....	89.2	86.8	80.4	85.5	89.3	89.3	101.1	104.4	96.0	123.7	95.5
1891....	106.2	104.4	85.8	98.8	103.6	103.8	99.8	97.2	101.1	114.9	102.0
1892....	98.8	84.4	80.5	88.0	116.6	116.5	109.3	99.1	110.4	121.2	103.4
1893....	105.4	102.2	98.6	102.1	155.3	154.0	126.9	157.6	148.5	106.5	125.8
1894....	97.0	101.0	101.5	99.8	111.3	112.2	103.6	121.4	112.1	80.2	103.5
1895....	102.7	101.4	95.9	100.0	96.3	96.3	96.2	101.7	97.6	82.2	96.6
1896....	90.5	93.7	88.1	90.8	73.2	73.0	95.8	76.8	79.7	82.9	84.3
1897....	99.7	95.7	125.1	106.8	80.1	79.6	90.9	76.6	81.8	96.6	93.0
1898....	101.3	114.2	118.8	111.4	88.3	90.5	82.0	84.8	86.4	98.0	97.2
1899....	108.3	115.9	125.6	116.6	86.4	85.1	93.8	80.3	86.4	94.3	98.7
1900....	104.3	121.7	114.2	113.4	111.4	111.6	104.2	107.5	108.7	96.4	108.9
1901....	102.1	116.3	112.6	110.3	132.0	132.5	109.2	134.2	127.0	89.5	116.1
1902....	125.9	147.1	118.0	130.3	159.0	159.5	123.1	154.2	149.0	97.9	135.6
1903....	101.7	113.1	117.2	110.7	142.1	143.0	129.2	143.1	139.4	98.7	123.5
1904....	106.1	109.4	123.5	113.0	114.8	115.4	108.9	120.6	114.9	103.2	112.7
1905....	104.0	125.0	121.6	116.9	118.5	119.4	106.3	123.9	117.0	113.9	116.6
1906....	101.2	110.3	119.2	110.2	139.6	140.2	125.5	150.5	139.0	120.7	125.9
1907....	114.7	122.5	144.0	127.1	141.3	140.1	132.4	151.0	141.2	116.0	132.8
1908....	[a] 129.5	164.5	153.2	[a] 148.2	133.5	132.6	114.3	137.3	129.3	114.5	[a] 137.4

Year.	Milk: fresh.	Molasses: New Orleans, open kettle.	Rice: domestic, choice.	Salt.			Soda: bicarbonate of, American.	Spices.			Starch: pure corn.
				American.	Ashton's.	Average.		Nutmegs.	Pepper, Singapore.	Average.	
1890....	103.1	112.4	107.8	112.5	111.9	112.2	131.6	146.2	153.7	150.0	99.6
1891....	104.7	88.5	113.5	111.7	108.1	109.9	151.7	140.7	116.6	128.7	109.5
1892....	105.1	101.2	101.4	107.5	107.8	107.7	104.3	123.1	92.0	107.6	109.5
1893....	109.4	106.2	81.8	99.6	105.5	102.6	136.4	106.1	79.4	92.8	109.5
1894....	103.1	98.1	93.8	102.1	101.6	101.9	128.2	92.5	68.9	80.7	103.5
1895....	99.2	97.8	95.0	99.6	93.0	96.3	84.7	91.8	66.4	79.1	101.1
1896....	91.8	103.0	92.5	88.4	93.0	90.7	72.7	83.1	66.8	75.0	93.6
1897....	92.2	83.1	96.6	93.9	93.0	93.5	71.8	77.6	88.7	83.2	91.2
1898....	93.7	97.8	108.4	94.4	93.0	93.7	61.7	72.7	119.0	95.9	91.2
1899....	99.2	111.9	108.2	90.4	93.0	91.7	56.0	66.4	149.1	107.8	91.2
1900....	107.5	151.5	97.7	142.1	93.0	117.6	58.9	60.2	172.4	116.3	91.2
1901....	102.7	120.1	97.7	121.6	99.0	110.3	51.2	54.3	172.5	113.4	85.8
1902....	112.9	115.5	99.6	90.3	101.0	95.7	51.7	46.9	167.6	107.3	80.3
1903....	112.9	112.5	100.9	87.2	102.0	94.6	61.7	66.6	172.1	119.4	92.5
1904....	107.8	107.8	78.6	109.4	([b])	109.4	62.2	50.3	164.1	107.2	95.8
1905....	113.3	102.5	74.3	107.2	([b])	107.2	62.2	39.8	162.5	101.2	100.7
1906....	118.0	107.9	84.5	101.4	([b])	101.4	62.2	40.0	151.9	96.0	105.3
1907....	131.4	129.7	95.2	112.6	([b])	112.6	62.2	32.3	132.7	82.5	109.5
1908....	129.0	112.7	111.2	111.5	([b])	111.5	52.6	([b])	95.5	95.5	104.9

[a] Including fresh carcass beef (Chicago market). See explanation, page 231.
[b] Quotations discontinued.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Food, etc.										
	Sugar.				Tallow.	Tea: Formosa, fine.	Vegetables, fresh.			Vinegar: cider, Monarch.	Average, food, etc.
	89° fair refining.	96° centrifugal.	Granulated.	Average.			Onions.	Potatoes, white.	Average.		
1890....	143.9	141.1	130.5	138.5	105.7	96.3	127.8	119.3	123.6	105.4	112.4
1891....	101.8	101.1	99.7	100.9	111.0	99.2	121.3	154.9	138.1	121.8	115.7
1892....	84.5	85.7	92.1	87.4	106.4	106.0	106.0	91.1	98.6	111.1	103.6
1893....	94.3	95.1	102.3	97.2	125.1	101.7	93.8	134.5	114.2	101.5	110.2
1894....	81.2	83.5	87.0	83.9	110.3	98.0	95.6	122.8	109.2	101.5	99.8
1895....	85.2	84.1	87.9	85.7	99.8	95.1	91.6	86.7	89.2	98.1	94.6
1896....	93.9	93.7	95.9	94.5	78.9	91.0	57.3	39.4	48.4	88.0	83.8
1897....	90.6	92.1	95.1	92.6	76.3	98.6	115.5	65.7	90.6	88.0	87.7
1898....	109.2	109.5	105.2	108.0	81.8	104.2	96.2	102.1	99.2	89.6	94.4
1899....	115.4	114.3	104.2	111.3	104.1	109.8	94.8	83.6	89.2	94.7	98.3
1900....	119.2	118.2	112.8	116.7	111.5	104.9	71.4	74.9	73.2	91.3	104.2
1901....	103.6	104.4	106.8	104.9	119.1	100.4	103.0	113.0	108.0	89.6	105.9
1902....	89.3	91.5	94.2	91.7	144.6	106.2	107.2	119.4	113.3	95.3	111.3
1903....	95.0	96.1	98.2	96.4	117.2	80.9	104.9	105.2	105.1	88.0	107.1
1904....	102.1	102.7	101.0	101.9	105.5	97.1	104.6	146.3	125.5	89.6	107.2
1905....	108.8	110.6	111.2	110.2	103.2	94.2	95.3	80.7	88.0	98.6	108.7
1906....	93.7	95.3	95.5	94.8	119.3	82.8	96.8	109.7	103.3	115.0	112.6
1907....	95.7	97.0	98.4	97.0	142.8	81.0	103.0	98.4	100.7	116.7	117.8
1908....	104.9	105.0	104.5	104.8	126.7	75.1	104.0	142.6	[a] 124.8	124.6	[b] 120.6

Year.	Cloths and clothing.										
	Bags: 2-bu., Amoskeag.	Blankets.				Boots and shoes.					
		11-4, all wool.	11-4, cotton warp, all wool filling.	11-4, cotton warp, cotton and wool filling.	Average.	Men's brogans, split.	Men's calf bal. shoes, Goodyear welt.	Men's split boots.	Men's vici kid shoes, Goodyear. welt.	Women's solid grain shoes.	Average.
1890....	113.9	108.3	106.0	108.5	107.6	106.1	101.0	104.0	108.7	104.0	104.8
1891....	111.7	106.0	106.0	108.5	106.8	106.1	101.0	104.0	108.7	97.9	103.5
1892....	110.8	107.1	104.4	101.4	104.3	104.9	101.0	104.0	108.7	94.8	102.7
1893....	106.8	107.1	104.4	99.1	103.5	102.3	101.0	100.9	108.7	91.7	100.9
1894....	91.1	101.2	89.7	96.7	95.9	97.9	101.0	97.9	108.7	91.7	99.4
1895....	82.2	89.3	88.1	94.3	90.6	99.2	101.0	91.7	97.8	104.0	98.7
1896....	91.6	89.3	91.4	94.3	91.7	100.4	101.0	94.8	97.8	104.0	99.6
1897....	92.9	89.3	106.0	99.1	98.1	96.0	101.0	97.9	87.0	104.0	97.2
1898....	95.6	107.1	102.0	99.1	102.7	92.2	97.6	100.9	87.0	104.0	96.3
1899....	103.4	95.2	102.0	99.1	98.8	94.8	94.3	104.0	87.0	104.0	96.8
1900....	112.6	107.1	122.3	123.8	117.7	94.8	94.3	110.1	87.0	110.6	99.4
1901....	101.0	101.2	106.0	112.0	106.4	95.4	96.8	112.4	87.0	104.5	99.2
1902....	102.4	101.2	106.0	112.0	106.4	94.1	96.8	111.1	87.0	105.5	98.9
1903....	104.2	110.1	114.2	117.9	114.1	93.5	98.9	113.1	87.0	108.6	100.2
1904....	128.4	110.1	118.3	123.8	117.4	93.5	98.9	113.7	87.3	112.3	101.1
1905....	109.6	119.0	126.4	141.5	129.0	101.5	100.0	120.5	95.5	119.5	107.4
1906....	129.1	122.0	130.5	141.5	131.3	126.8	[c] 108.0	144.8	103.4	126.2	121.8
1907....	138.5	119.0	130.5	141.5	130.3	128.7	[c] 109.0	160.0	108.7	123.1	125.9
1908....	134.3	113.1	([d])	[e] 136.1	124.6	114.8	[c] 109.0	([d])	108.7	118.5	121.3

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[a] Including cabbage. See explanation, page 231.

[b] Including canned corn, canned peas, and canned tomatoes, fresh carcass beef (Chicago market), dressed poultry, and cabbage. See explanation on page 231.

[c] Men's vici calf shoes, Blucher bal., vici calf top, single sole. For method of computing relative price, see pages 230 and 231.

[d] Quotations discontinued.

[e] 10-4, 2 lbs. to the pair, 54 x 74, all cotton. For method of computing relative price, see pages 230 and 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Cloths and clothing.								
	Broadcloths: first quality, black, 54-inch, XXX wool.	Calico: Cocheco prints.	Carpets.				Cotton flannels.		
			Brussels, 5-frame, Bigelow.	Ingrain, 2-ply, Lowell.	Wilton, 5-frame, Bigelow.	Average.	2¾ yards to the pound.	3½ yards to the pound.	Average.
1890....	113.7	117.5	103.1	108.6	104.2	105.3	123.9	119.7	121.8
1891....	113.7	104.0	112.7	116.2	109.4	112.8	123.9	119.7	121.8
1892....	113.7	117.5	103.1	106.1	104.2	104.5	118.7	113.0	115.9
1893....	113.7	113.0	98.3	111.1	104.2	104.5	102.7	100.0	101.4
1894....	91.2	99.5	93.5	98.5	104.2	98.7	95.6	95.7	95.7
1895....	79.7	94.9	93.5	88.4	91.1	91.0	92.1	91.3	91.7
1896....	79.7	94.9	93.5	85.9	91.1	90.2	92.1	95.7	93.9
1897....	98.2	90.4	95.9	90.9	93.8	93.5	81.4	95.7	88.6
1898....	98.2	81.4	103.1	98.5	99.0	100.2	81.4	80.5	81.0
1899....	98.2	87.3	103.1	96.0	99.0	99.4	87.7	88.3	88.0
1900....	108.0	94.9	103.1	103.5	101.6	102.7	104.5	98.6	101.6
1901....	110.3	90.4	103.1	101.0	101.6	101.9	90.7	100.0	95.4
1902....	110.3	90.4	103.5	101.9	102.2	102.5	92.1	100.0	96.1
1903....	110.3	91.1	108.7	108.1	108.9	108.6	104.1	109.4	106.8
1904....	110.5	95.7	110.3	109.1	110.7	110.0	125.4	125.7	125.6
1905....	115.2	93.5	115.1	116.2	115.9	115.7	121.0	118.4	119.7
1906....	116.6	99.5	117.9	116.2	118.9	117.7	130.7	125.7	128.2
1907....	116.6	[a] 121.0	124.7	121.2	123.7	123.2	139.9	139.1	139.5
1908....	115.6	[a] 104.3	119.9	116.6	120.2	118.9	117.4	121.0	119.2

Year.	Cotton thread: 6-cord, 200-yard spools, J. & P. Coats.	Cotton yarns.			Denims: Amoskeag.	Drillings.			Flannels: white, 4-4, Ballard Vale No. 3.
		Carded, white, mule-spun, northern, cones, 10/1	Carded, white, mule-spun, northern, cones, 22/1.	Average.		Brown, Pepperell.	30-inch, Stark A.	Average.	
1890....	101.6	111.3	112.1	111.7	112.5	119.4	122.8	121.1	116.8
1891....	100.7	111.6	114.0	112.8	109.6	114.0	115.2	114.6	116.8
1892....	100.7	117.2	116.8	117.0	109.6	101.7	102.7	102.2	115.9
1893....	100.7	112.4	108.6	110.5	112.5	103.1	108.1	105.6	109.5
1894....	100.7	94.7	91.2	93.0	105.4	97.7	96.4	97.1	94.1
1895....	100.7	91.9	92.2	92.1	94.6	92.5	93.9	93.2	81.7
1896....	99.6	92.2	93.7	93.0	94.6	100.2	100.2	100.2	85.4
1897....	98.4	90.3	90.8	90.6	89.2	91.8	88.9	90.4	82.6
1898....	98.4	90.5	91.0	90.8	85.9	89.7	83.9	86.8	97.8
1899....	98.4	87.6	89.4	88.5	85.8	89.2	87.7	88.5	99.5
1900....	120.1	115.0	115.9	115.5	102.8	105.9	104.0	105.0	108.7
1901....	120.1	98.6	97.9	98.3	100.2	102.3	102.1	102.2	100.8
1902....	120.1	95.6	92.4	94.0	100.6	100.5	103.5	102.0	105.8
1903....	120.1	116.2	109.5	112.9	108.0	108.2	111.5	109.9	114.3
1904....	120.1	123.2	115.7	119.5	116.6	127.1	126.3	126.7	117.6
1905....	120.1	107.8	103.5	105.7	103.7	126.0	121.5	123.8	118.4
1906....	120.1	124.6	117.0	120.8	118.1	135.5	142.0	138.8	122.4
1907....	134.8	137.1	130.6	133.9	132.3	144.2	150.1	147.2	123.1
1908....	131.7	110.5	106.9	108.8	111.1	123.4	137.8	130.6	122.4

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[a] Calico: American standard prints, 64 x 64. For method of computing relative price, see pages 230 and 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Cloths and clothing.								
	Ginghams.			Horse blankets: 6 pounds each, all wool.	Hosiery.				
	Amoskeag.	Lancaster.	Average.		Men's cotton half hose, seamless, fast black, 20 to 22 oz.	Men's cotton half hose, seamless, 84 needles.	Women's combed Egyptian cotton hose, high spliced heel.(a)	Women's cotton hose, seamless, fast black, 26 to 28 oz.	Average.
1890....	117.3	120.8	119.1	109.1	133.3	124.3	....	131.6	129.7
1891....	122.0	122.2	122.1	104.7	123.1	124.3	....	121.1	122.8
1892....	122.0	122.2	122.1	109.1	112.8	123.6	....	115.8	117.4
1893....	118.4	111.3	114.9	104.7	110.3	111.5	102.7	113.2	109.4
1894....	91.0	88.0	89.5	96.0	102.6	92.4	102.7	105.3	100.8
1895....	87.4	86.6	87.0	92.5	94.9	89.2	101.4	92.1	94.4
1896....	88.6	87.3	88.0	90.8	87.2	89.2	101.4	84.2	90.5
1897....	82.2	86.2	84.2	99.5	82.1	82.9	100.0	81.6	86.7
1898....	80.9	85.2	83.1	99.5	76.9	82.9	97.3	76.3	83.4
1899....	89.5	89.9	89.7	94.2	76.9	79.7	94.6	78.9	82.5
1900....	96.6	96.0	96.3	118.7	82.1	82.9	102.7	81.6	87.3
1901....	91.9	92.7	92.3	109.9	71.8	92.4	108.1	71.1	85.9
1902....	98.1	100.3	99.2	109.9	76.9	85.0	100.0	78.9	85.2
1903....	103.2	100.3	101.8	117.8	82.1	90.0	101.4	86.8	90.1
1904....	102.8	97.0	99.9	122.2	82.1	95.9	97.3	81.6	89.2
1905....	96.6	90.2	93.4	130.9	82.1	89.2	94.6	84.2	87.5
1906....	106.0	103.3	104.7	135.3	85.3	89.2	102.7	81.6	89.7
1907....	123.5	120.4	122.0	130.9	94.8	95.6	109.5	89.5	97.4
1908....	102.8	100.0	101.5	126.5	88.9	(b)	95.9	[c]84.2	89.5

Year.	Leather.					Linen thread.		
	Harness, oak.	Sole, hemlock.	Sole, oak.	Wax calf, 30 to 40 lbs. to the dozen, B grade.	Average.	Shoe, 10s, Barbour.	3-cord, 200-yard spools, Barbour.	Average.
1890....	99.3	99.1	112.1	91.7	100.6	101.9	104.6	103.3
1891....	99.6	95.8	109.4	98.8	100.9	101.9	93.2	97.6
1892....	91.4	89.1	101.7	105.9	97.0	101.9	94.1	98.0
1893....	92.7	92.6	103.6	98.5	96.9	102.8	97.5	100.2
1894....	87.8	88.4	97.5	92.3	91.5	105.0	99.9	102.5
1895....	111.5	106.9	101.7	112.0	108.0	97.3	99.9	98.6
1896....	98.6	97.0	87.0	98.3	95.2	97.3	99.9	98.6
1897....	93.9	104.8	91.6	94.1	96.1	97.3	101.8	99.6
1898....	109.1	109.8	95.5	103.3	104.4	97.3	104.6	101.0
1899....	116.0	116.2	99.9	105.0	109.3	97.3	104.6	101.0
1900....	116.8	128.4	107.3	100.3	113.2	101.5	104.6	103.1
1901....	114.7	127.6	104.8	96.0	110.8	101.9	104.6	103.3
1902....	114.7	122.1	113.0	100.9	112.7	101.9	104.6	103.3
1903....	114.3	116.9	111.3	105.4	112.0	96.7	98.2	97.5
1904....	110.0	116.5	102.6	105.0	108.5	97.2	103.7	100.5
1905....	115.0	118.1	108.9	106.5	112.1	97.2	103.7	100.5
1906....	128.1	130.9	112.9	109.5	120.4	102.1	103.7	102.9
1907....	129.0	136.4	113.6	117.1	124.0	102.1	107.3	104.7
1908....	121.1	129.3	113.0	[d]113.6	119.4	102.1	(b)	102.1

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[a] Average for 1893-1899=100.0.

[b] Quotations discontinued.

[c] 26-ounce. For method of computing relative price, see pages 230 and 231.

[d] Chrome calf, glazed finish, B grade. For method of computing relative price, see pages 230 and 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Cloths and clothing.							
	Overcoatings.						Print cloths: 28-inch, 64 x 64.	Shawls: standard, all wool, 72 x 144 in., 42-oz.
	Beaver, Moscow, all wool, black.	Chinchilla, B-rough, all wool.	Chinchilla, cotton warp, C. C. grade.	Covert cloth, light weight, staple.	Kersey, standard, 27 to 28 oz. (a)	Average.		
1890....	116.7	113.4	109.1	105.7	....	111.2	117.7	107.0
1891....	116.7	113.4	107.7	105.7	....	110.9	103.5	107.0
1892....	116.7	113.4	109.1	105.7	....	111.2	119.3	107.0
1893....	111.7	108.5	109.9	105.7	....	109.0	114.6	107.0
1894....	95.5	92.8	96.9	104.2	....	97.4	96.8	107.0
1895....	84.9	87.7	92.3	99.9	....	91.2	100.9	107.0
1896....	84.9	87.7	89.2	87.4	....	87.3	90.9	89.1
1897....	84.9	87.7	93.7	83.6	94.9	89.0	87.6	89.5
1898....	89.4	97.7	98.3	97.2	104.2	97.4	72.6	90.2
1899....	98.7	97.7	93.9	104.9	100.9	99.2	96.3	89.1
1900....	120.1	116.7	100.2	101.4	126.3	112.9	108.6	107.0
1901....	106.1	97.7	90.8	97.2	120.3	102.4	99.3	107.0
1902....	106.1	97.7	92.3	97.2	120.3	102.7	108.9	107.0
1903....	117.3	103.1	92.8	94.0	126.3	106.7	113.3	107.0
1904....	111.7	103.1	93.3	94.0	132.3	106.9	117.3	107.0
1905....	117.3	111.8	94.0	96.9	146.8	113.4	110.0	117.5
1906....	(b)	117.8	101.6	96.9	163.7	120.0	127.7	128.5
1907....	(b)	119.4	100.5	96.9	158.0	118.7	167.4	107.0
1908....	(b)	(b)	89.0	96.9	148.3	111.7	118.0	(b)

Year.	Sheetings.									
	Bleached.				Brown.					Average.
	10-4, Atlantic.	10-4, Pepperell.	10-4, Wamsutta S. T.	Average.	4-4, Atlantic A.	4-4, Indian Head.	4-4, Pepperell R.	4-4, Stark A. A.	Average.	
1890....	122.1	116.2	106.0	114.8	121.0	115.8	116.2	125.7	119.7	117.6
1891....	116.4	106.6	107.2	110.1	118.1	116.1	108.3	113.1	113.9	112.3
1892....	108.7	100.8	99.8	103.1	106.7	103.5	103.3	103.8	104.3	103.8
1893....	111.8	103.3	103.6	106.2	111.9	108.5	105.8	109.3	108.9	107.7
1894....	94.8	92.5	93.5	93.6	99.3	95.5	96.4	99.2	97.6	95.9
1895....	93.8	94.7	92.2	93.6	94.0	93.5	96.0	97.7	95.3	94.6
1896....	92.6	95.1	99.2	95.6	96.7	99.4	101.3	97.3	98.7	97.4
1897....	87.4	92.3	99.2	93.0	88.6	93.9	95.3	86.1	91.0	91.8
1898....	83.2	91.3	99.2	91.2	80.1	86.3	86.2	80.8	83.4	86.7
1899....	89.4	107.3	100.1	98.9	84.3	86.9	91.5	85.9	87.2	92.2
1900....	111.3	121.7	104.3	112.4	100.4	99.5	107.4	96.8	101.0	105.9
1901....	100.9	112.4	99.2	104.2	98.0	100.8	107.4	94.1	100.1	101.8
1902....	104.4	111.5	99.2	105.0	99.3	99.8	103.3	[c] 92.6	98.8	101.4
1903....	115.7	120.8	103.0	113.2	115.0	108.8	108.7	[c] 101.9	108.6	110.6
1904....	128.3	128.7	94.1	117.0	129.8	128.1	121.4	[c] 117.0	124.1	121.1
1905....	110.2	120.3	91.6	107.4	115.6	121.1	116.9	[c] 118.6	118.1	113.5
1906....	[d] 121.5	131.4	92.7	115.2	133.6	128.1	124.3	[c] 125.5	127.9	122.4
1907....	[d] 134.3	153.0	103.4	130.2	138.9	133.4	135.4	[c] 127.1	133.7	132.2
1908....	[d] 138.7	129.6	94.7	121.3	(b)	124.4	124.0	[e] 102.0	118.1	120.0

[a] Average for 1897-1899=100.0.

[b] Quotations discontinued.

[c] Sheetings: brown, 4-4, Massachusetts Mills, Flying Horse brand. For method of computing relative price, see pages 230 and 231.

[d] Sheetings: bleached, 9-4, Atlantic. For method of computing relative price, see pages 230 and 231.

[e] Sheetings: brown, 4-4, Lawrence, L. L. For method of computing relative price, see pages 230 and 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Cloths and clothing.								
	Shirtings: bleached.						Silk: raw.		
	4-4, Fruit of the Loom.	4-4, Hope.	4-4, Lonsdale.	4-4, New York Mills.	4-4, Wamsutta <o> XX	Average.	Italian, classical.	Japan, filatures.	Average.
1890....	116.1	115.2	116.2	110.5	106.6	112.9	122.7	130.5	126.6
1891....	109.8	111.6	113.1	110.2	106.4	110.2	98.4	99.8	99.1
1892....	111.0	105.2	111.7	106.3	102.6	107.4	105.3	107.7	106.5
1893....	114.3	113.2	114.4	105.6	103.5	110.2	118.2	113.0	115.6
1894....	99.9	98.4	100.0	101.0	100.2	99.9	86.5	83.7	85.1
1895....	96.2	96.5	95.9	97.1	102.2	97.6	94.9	94.2	94.6
1896....	95.6	98.4	94.2	101.0	100.3	97.9	85.3	84.8	85.1
1897....	88.0	91.1	87.1	95.4	98.6	92.0	85.5	86.2	85.9
1898....	80.2	82.2	81.8	89.5	85.1	83.8	91.1	90.5	90.8
1899....	88.5	87.5	86.1	82.8	94.1	87.8	112.1	109.7	110.9
1900....	103.4	106.5	100.6	89.7	101.8	100.4	106.0	103.7	104.9
1901....	103.0	111.0	101.5	86.8	92.3	98.9	90.4	87.4	88.9
1902....	103.8	107.3	101.9	87.4	93.4	98.8	96.5	95.1	95.8
1903....	105.4	107.1	103.9	97.0	102.7	103.2	106.3	102.9	104.6
1904....	110.2	111.9	109.5	94.7	97.2	104.7	90.8	90.6	90.7
1905....	102.7	105.2	101.7	96.8	99.4	101.2	96.5	99.3	97.9
1906....	112.2	115.6	110.9	[a]108.0	109.0	111.1	101.6	103.6	102.6
1907....	153.4	143.7	141.0	[a]132.8	116.0	137.4	131.1	125.9	128.5
1908....	125.4	(b)	120.1	[a]107.1	118.0	120.0	98.2	96.8	97.5

Year.	Suitings.							Tickings: Amoskeag A. C. A.
	Clay worsted diagonal, 12-oz., Wash. Mills.(c)	Clay worsted diagonal, 16-oz., Wash. Mills.(c)	Indigo blue, all wool, 54-inch, 14-ounce, Middlesex.	Indigo blue, all wool, 16-ounce.	Serge, Washington Mills 6700.(d)	Trouserings, fancy worsted.(d)	Average.	
1890....	....	....	116.9	109.2	....	....	113.1	113.1
1891....	....	....	116.9	109.2	....	....	113.1	110.7
1892....	....	....	116.9	109.2	120.9	106.6	113.4	108.4
1893....	....	....	114.0	109.2	120.9	106.6	112.7	111.3
1894....	....	....	111.1	92.3	90.7	98.9	98.3	102.2
1895....	92.5	93.8	87.1	83.0	90.7	87.9	89.2	94.8
1896....	89.1	87.6	86.0	89.9	81.6	92.3	87.8	96.0
1897....	92.2	93.3	79.1	87.4	87.7	92.3	88.7	91.9
1898....	111.3	111.4	86.0	103.2	99.8	108.9	103.4	84.3
1899....	114.9	113.9	86.0	107.2	107.7	106.6	106.1	87.0
1900....	131.4	133.7	86.0	118.4	107.6	117.6	115.8	102.2
1901....	110.6	111.0	89.6	109.2	106.6	102.2	104.9	95.5
1902....	110.9	108.6	99.2	109.2	105.1	101.8	105.8	99.0
1903....	115.2	112.1	108.8	112.6	100.4	104.6	109.0	104.1
1904....	112.2	109.6	109.1	114.1	102.9	106.2	109.0	114.3
1905....	132.7	129.3	115.6	119.0	128.1	111.6	122.7	102.1
1906....	147.5	146.4	129.3	126.2	138.8	120.6	134.8	119.0
1907....	142.1	139.3	129.3	126.2	139.5	122.3	133.1	129.4
1908....	135.2	133.0	119.0	(b)	132.0	124.6	127.6	106.0

[a] Williamsville, A1.
[b] Quotations discontinued.
[c] Average for 1895-1899=100.0.
[d] Average for 1892-1899=100.0.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Cloths and clothing.									
	Underwear.			Women's dress goods.						
	Shirts and drawers, white, all wool, etc.	Shirts and drawers, white, merino, 52% wool, etc.	Average.	Alpaca, cotton warp, 22-inch, Hamilton.	Cashmere, all wool, 10-11 twill, 38-in., Atlantic J.	Cashmere, cotton warp, 9-twill, 4-4, Atlantic F.	Cashmere, cotton warp, 22-inch, Hamilton.	Cashmere, cotton warp, 27-inch, Hamilton.	Franklin sackings, 6-4.	Average.
1890....	106.2	106.9	106.6	108.1	119.8	119.3	109.9	111.0	115.3	113.9
1891....	110.0	112.7	111.4	108.1	126.1	119.3	109.9	111.0	119.9	115.7
1892....	110.0	112.7	111.4	106.3	128.2	117.7	108.3	109.6	119.9	115.0
1893....	110.0	112.7	111.4	104.6	111.8	98.4	106.7	106.1	117.6	107.5
1894....	92.7	95.4	94.1	100.9	84.3	88.7	100.3	102.7	96.8	95.6
1895....	92.7	92.5	92.6	93.7	81.0	83.8	97.0	95.8	84.3	89.3
1896....	92.7	92.5	92.6	93.7	67.5	83.6	93.8	93.0	80.7	85.4
1897....	92.7	92.5	92.6	93.7	82.2	90.3	90.5	88.8	82.2	88.0
1898....	92.7	95.4	94.1	93.7	88.6	94.3	90.5	88.8	88.4	90.7
1899....	100.4	86.7	93.6	96.6	110.4	104.8	93.1	93.0	94.9	98.8
1900....	100.4	95.4	97.9	104.6	119.1	108.0	100.3	99.9	118.3	108.4
1901....	100.4	95.4	97.9	104.6	111.3	104.3	100.3	102.7	104.5	104.6
1902....	100.4	95.4	97.9	103.7	111.3	108.0	99.5	102.0	108.3	105.5
1903....	100.4	95.4	97.9	101.5	114.3	110.5	97.8	101.2	114.5	106.6
1904....	100.4	95.4	97.9	112.4	117.7	114.5	106.7	110.5	113.4	112.5
1905....	100.4	95.4	97.9	[a] 114.9	128.4	132.7	[b] 107.7	121.4	131.0	122.7
1906....	115.8	106.0	110.9	[a] 121.6	134.9	141.8	[b] 109.6	[c] 124.6	133.3	127.6
1907....	115.8	106.0	110.9	[a] 124.9	134.9	147.0	[b] 110.1	[c] 127.8	126.8	128.6
1908....	115.8	106.0	110.9	[d] 124.9	[e] 127.1	138.6	[b] 113.5	[c] 124.6	[f] 126.8	126.3

Year.	Wool.			Worsted yarns.			Average, cloths and clothing.
	Ohio, fine fleece (X and XX grade), scoured.	Ohio, medium fleece (¼ and ⅜ grade), scoured.	Average.	2-40s, Australian fine.	2-40s, XXX, white, in skeins.	Average.	
1890....	129.5	134.6	132.1	120.4	124.1	122.3	113.5
1891....	124.1	127.5	125.8	121.3	125.4	123.4	111.3
1892....	110.7	115.6	113.2	119.6	114.8	117.2	109.0
1893....	102.0	101.2	101.6	111.4	107.6	109.5	107.2
1894....	80.5	77.6	79.1	91.3	91.2	91.3	96.1
1895....	68.2	71.9	70.1	72.9	75.1	74.0	92.7
1896....	71.3	69.8	70.6	71.2	74.5	72.9	91.3
1897....	89.7	87.6	88.7	83.6	81.3	82.5	91.1
1898....	111.3	105.3	108.3	101.2	99.7	100.5	93.4
1899....	112.8	108.8	110.8	107.1	106.3	106.7	96.7
1900....	119.3	116.0	117.7	118.3	118.5	118.4	106.8
1901....	98.7	94.5	96.6	102.2	102.1	102.2	101.0
1902....	104.4	97.2	100.8	110.3	[g] 113.1	111.7	102.0
1903....	118.5	102.1	110.3	115.6	[g] 120.4	118.0	106.6
1904....	124.2	106.7	115.5	116.6	[g] 116.3	116.5	109.8
1905....	137.4	117.2	127.3	123.0	[g] 126.4	124.7	112.0
1906....	129.9	112.3	121.1	127.0	[g] 130.0	128.5	120.0
1907....	129.9	113.0	121.5	127.3	[g] 128.4	127.9	126.7
1908....	129.6	107.3	118.3	120.8	[h] 114.4	117.6	116.9

[a] Danish cloth, cotton warp and filling, 22-inch. For method of computing relative price, see pages 230 and 231.

[b] Poplar cloth, cotton warp and filling, 36-inch. For method of computing relative price, see pages 230 and 231.

[c] Cashmere, cotton warp, 36-inch, Hamilton. For method of computing relative price, see pages 230 and 231.

[d] Sicilian cloth, cotton warp, 50-inch. For method of computing relative price, see pages 230 and 231.

[e] Cashmere, all wool, 8-9 twill, 35-inch, Atlantic Mills. For method of computing relative price, see pages 230 and 231.

[f] Panama cloth, all wool, 54-inch. For method of computing relative price, see pages 230 and 231.

[g] Designated as XXXX.

[h] 2-32s, crossbred stock, white, in skeins. For method of computing relative price, see pages 230 and 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Fuel and lighting.										
	Candles: adamantine, 6s, 14-oz.	Coal.									
		Anthracite.					Bituminous.				Average.
		Broken.	Chestnut.	Egg.	Stove.	Average.	Georges Creek (at mine).	Georges Creek (f. o. b. N. Y. Harbor).	Pittsburg (Youghiogheny).	Average.	
1890....	102.3	103.5	93.3	100.6	97.8	98.8	97.1	108.9	103.3	103.1	100.6
1891....	102.3	102.3	96.7	104.4	101.6	101.3	106.9	110.5	122.7	113.4	106.4
1892....	102.3	107.4	109.7	110.8	109.4	109.3	101.3	106.9	116.5	108.2	108.9
1893....	112.9	105.8	115.9	107.2	110.5	109.9	103.6	107.6	117.9	109.7	109.8
1894....	110.9	101.5	98.5	94.3	94.9	97.3	92.4	99.8	98.6	96.9	97.1
1895....	108.7	97.5	82.9	84.3	82.4	86.8	87.2	102.5	93.3	94.3	90.0
1896....	108.7	97.1	98.9	98.8	100.0	98.7	101.3	97.1	89.1	95.8	97.5
1897....	95.3	96.4	103.9	105.7	105.8	103.0	93.8	89.0	88.6	90.5	97.6
1898....	78.4	95.4	98.8	100.2	100.1	98.6	102.7	79.3	87.9	90.0	94.9
1899....	78.4	93.1	101.4	93.8	97.6	96.5	113.9	98.4	82.6	98.3	97.3
1900....	135.4	97.1	108.9	99.7	104.0	102.4	135.0	106.0	117.0	119.3	109.7
1901....	140.7	105.5	120.4	112.9	113.9	113.2	150.5	106.6	117.0	124.7	118.1
1902....	140.7	110.4	124.0	121.5	117.6	118.4	239.1	148.0	122.4	169.8	140.4
1903....	127.4	126.2	134.2	134.3	127.1	130.5	269.6	161.8	143.9	191.8	156.7
1904....	115.1	126.1	134.2	134.2	127.1	130.4	196.9	116.5	132.5	148.6	138.2
1905....	109.7	125.1	134.1	134.3	127.1	130.2	180.0	114.8	124.4	139.7	134.3
1906....	98.0	124.8	135.2	135.3	128.1	130.9	174.4	113.9	122.7	137.0	133.5
1907....	94.8	124.9	134.1	134.2	127.1	130.1	173.0	118.0	128.1	139.7	134.2
1908....	93.5	124.8	134.1	134.1	127.1	130.1	162.2	112.3	132.3	136.1	132.7

Year.	Coke: Connellsville, furnace.	Matches: parlor, domestic.	Petroleum.					Average, fuel and lighting.
			Crude.	Refined.			Average.	
				For export.	150° fire test, w. w.	Average.		
1890....	122.7	111.5	95.4	112.9	111.8	112.4	106.7	104.7
1891....	110.4	99.6	73.6	105.5	98.8	102.2	92.6	102.7
1892....	106.5	99.6	61.1	93.8	89.2	81.4	91.5	101.1
1893....	87.1	99.6	70.3	80.4	81.5	81.0	77.4	100.0
1894....	62.3	94.9	92.2	79.4	81.5	80.5	84.4	92.4
1895....	78.0	96.1	149.2	109.6	103.6	106.6	120.8	98.1
1896....	110.4	99.6	129.5	108.2	116.7	112.5	118.1	104.3
1897....	95.2	99.6	86.5	92.0	101.1	96.6	93.2	96.4
1898....	98.8	99.6	100.2	96.8	102.1	99.5	99.7	95.4
1899....	128.7	99.6	142.1	121.9	114.0	118.0	126.0	105.0
1900....	155.8	99.6	148.5	131.6	133.5	132.6	137.9	120.9
1901....	115.6	99.6	132.9	115.4	123.1	119.3	123.8	119.5
1902....	158.2	90.1	135.9	113.1	124.5	118.8	124.5	134.3
1903....	171.5	85.4	174.5	132.5	153.1	142.8	153.4	149.3
1904....	96.4	85.4	178.8	127.3	153.6	140.5	153.2	132.6
1905....	134.7	85.4	152.1	111.2	141.9	126.6	135.1	128.8
1906....	157.5	85.4	175.5	117.4	146.1	131.8	146.3	131.9
1907....	166.3	85.4	190.5	127.0	151.2	139.1	156.2	135.0
1908....	100.6	85.4	195.6	133.9	151.7	143.1	160.6	130.8

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Metals and implements.											
	Bar iron.			Barb wire: galvanized.	Builders' hardware.				Copper.			
	From mill (Pittsburg market).	From store (Phila. market).	Average.		Butts.	Door-knobs: steel, bronze plated.	Locks: common mortise.	Average.	Ingot.	Sheet, hot-rolled (base sizes).	Wire, bare.	Average.
1890....	126.9	125.0	126.0	141.2	111.7	97.8	101.6	103.7	127.6	137.1	128.1	130.9
1891....	117.9	115.9	116.9	127.4	111.7	97.8	101.6	103.7	105.8	114.5	112.7	111.0
1892....	113.1	114.0	113.6	109.5	96.8	97.8	101.6	98.7	93.5	96.4	98.2	96.0
1893....	103.4	103.7	103.6	99.7	98.4	97.8	101.6	99.3	88.6	90.4	92.2	90.4
1894....	82.8	81.7	82.3	86.1	95.9	97.8	100.1	97.9	76.8	85.9	79.0	80.6
1895....	86.2	87.8	87.0	88.9	100.3	115.1	102.0	105.8	87.1	85.9	84.6	85.9
1896....	84.1	85.4	84.8	77.7	104.1	102.1	106.1	104.1	88.9	85.9	92.6	89.1
1897....	75.9	79.9	77.9	71.3	96.8	97.8	102.0	98.9	91.7	88.2	93.9	91.3
1898....	73.8	78.0	75.9	72.7	92.4	97.8	91.8	94.0	96.8	84.4	93.9	91.7
1899....	134.5	126.2	130.4	125.5	92.4	97.8	91.8	94.0	143.2	131.1	124.7	133.0
1900....	148.3	119.5	133.9	134.4	126.6	106.8	96.5	110.0	134.6	124.6	123.0	127.4
1901....	124.1	112.2	118.2	120.2	116.8	112.0	91.8	106.9	136.7	125.9	124.0	128.9
1902....	133.8	129.9	131.9	116.9	126.6	126.9	104.0	119.2	97.3	107.5	90.6	98.5
1903....	122.1	122.0	122.1	108.4	126.6	132.6	110.2	123.1	110.9	115.6	102.3	109.6
1904....	102.1	104.9	103.5	99.3	126.6	144.8	125.5	132.3	106.2	108.5	98.2	104.3
1905....	129.0	117.1	123.1	94.3	126.6	213.6	183.1	174.4	127.7	120.1	116.3	121.4
1906....	126.8	120.7	123.8	96.1	126.6	259.8	221.3	202.6	158.9	143.2	144.0	148.7
1907....	131.3	128.7	130.0	104.3	126.6	265.2	244.8	212.2	172.2	168.3	164.1	168.2
1908....	109.5	103.7	106.6	103.8	126.6	235.7	203.2	192.3	110.5	108.0	103.8	107.4

Year.	Metals and implements.									
	Lead: pig.	Lead pipe.	Nails.			Pig iron.				
			Cut, 8-penny, fence and common.	Wire, 8-penny, fence and common.	Average.	Bessemer.	Foundry No. 1.	Foundry No. 2.	Gray forge, southern, coke.	Average.
1890....	115.5	112.1	125.2	137.1	131.2	137.0	124.3	131.4	130.8	130.9
1891....	114.7	116.2	100.3	114.1	107.2	115.8	118.4	117.9	112.9	116.3
1892....	108.4	107.6	96.2	101.3	98.8	104.3	106.4	105.5	106.3	105.6
1893....	98.2	103.8	92.0	92.1	92.1	93.4	98.1	95.3	95.9	95.7
1894....	86.9	92.0	83.6	76.4	80.0	82.6	85.5	83.1	80.6	83.0
1895....	85.6	87.2	105.3	98.0	101.7	92.3	88.5	89.4	93.1	90.8
1896....	78.7	85.1	148.4	135.3	141.9	88.1	87.5	90.2	86.6	88.1
1897....	94.0	89.6	72.9	68.7	70.8	73.5	81.7	77.4	79.4	78.0
1898....	99.7	95.5	65.3	66.5	65.9	75.0	78.8	76.8	78.6	77.3
1899....	117.6	111.0	110.8	110.4	110.6	138.1	130.8	132.9	135.8	134.4
1900....	116.8	106.3	123.1	121.8	122.5	141.5	135.0	141.8	140.7	139.8
1901....	115.0	104.8	115.6	109.4	112.5	115.7	107.2	112.8	113.2	112.2
1902....	107.9	108.3	116.7	97.3	107.0	150.0	149.9	162.7	158.8	155.4
1903....	112.3	107.8	120.2	96.0	108.1	137.7	134.5	146.6	146.4	141.3
1904....	116.3	99.5	99.5	88.2	93.9	99.8	105.2	104.4	105.3	103.7
1905....	125.7	108.4	99.9	87.7	93.8	118.7	120.8	125.7	130.7	124.0
1906....	154.3	133.3	105.7	90.6	98.2	141.8	141.7	147.6	149.1	145.1
1907....	144.9	139.2	118.3	97.9	108.1	165.8	161.4	182.9	189.3	174.9
1908....	110.8	98.4	106.7	97.1	102.4	123.9	119.6	124.5	129.6	124.8

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Metals and implements.							Tin plates.		
	Quicksilver.	Silver: bar, fine.	Spelter: western.	Steel billets.	Steel rails.	Steel sheets: black, No. 27.(a)	Tin: pig.	Domestic, Bessemer, coke, 14x20.(b)	Imported, Bessemer, coke, I.C., 14x20.(c)	Average.
1890....	130.5	140.6	122.6	141.5	121.9	....	115.5	....	104.6	104.6
1891....	112.3	132.2	112.4	117.7	114.8	....	110.3	....	116.4	116.4
1892....	100.9	116.9	102.9	109.8	115.1	....	110.9	....	115.7	115.7
1893....	93.2	104.4	90.7	94.9	107.9	....	109.0	....	117.1	117.1
1894....	85.7	85.5	78.5	77.0	92.1	104.9	98.7	....	106.7	106.7
1895....	91.8	88.5	80.1	85.9	93.4	108.9	76.5	....	84.4	84.4
1896....	89.0	91.0	88.7	87.5	107.4	96.0	72.4	100.6	82.9	91.8
1897....	92.2	81.1	93.1	70.1	71.9	87.1	74.0	93.2	85.1	89.2
1898....	97.0	78.9	100.2	71.1	67.6	84.8	84.5	83.5	87.2	85.4
1899....	107.3	80.8	130.1	144.6	107.9	119.2	148.2	122.7	(d)	122.7
1900....	121.0	82.9	97.8	116.4	123.9	130.8	163.7	137.0	(d)	137.0
1901....	118.5	79.7	89.6	112.1	104.9	140.6	142.6	122.7	(d)	122.7
1902....	115.5	70.5	107.7	142.1	107.4	129.9	144.2	120.7	(d)	120.7
1903....	113.4	72.4	123.5	129.7	107.4	116.1	153.4	115.4	(d)	115.4
1904....	105.5	77.2	113.9	103.0	107.4	93.8	152.5	105.5	(d)	105.5
1905....	97.4	81.5	131.0	111.6	107.4	99.1	170.3	108.5	(d)	108.5
1906....	98.6	90.0	137.2	127.5	107.4	105.8	213.6	113.1	(d)	113.1
1907....	97.1	88.1	136.5	135.9	107.4	111.6	211.1	119.8	(d)	119.8
1908....	109.1	71.4	105.1	122.2	107.4	107.1	160.2	113.9	(d)	113.9

Year.	Tools.						Saws.		
	Augers.	Axes: M. C. O., Yankee.	Chisels: extra, socket firmer, 1-inch.	Files: 8-inch mill bastard.	Hammers: Maydole No. 1½.	Planes: Bailey No. 5, jack plane.	Crosscut, Disston No. 2.	Hand, Disston No. 7.	Average.
1890....	118.2	120.4	110.9	106.7	96.9	107.4	100.0	112.7	106.4
1891....	118.2	118.3	110.9	104.6	96.9	107.4	100.0	98.6	99.3
1892....	118.2	106.5	110.9	102.2	96.9	107.4	100.0	98.6	99.3
1893....	111.9	106.5	102.1	101.6	96.9	107.4	100.0	98.6	99.3
1894....	95.9	100.9	91.5	97.3	96.9	104.3	100.0	98.6	99.3
1895....	82.9	98.0	90.3	95.4	97.6	93.9	100.0	98.6	99.3
1896....	86.7	88.4	94.7	91.2	105.2	93.0	100.0	98.6	99.3
1897....	88.6	83.9	90.3	94.4	105.2	93.0	100.0	98.6	99.3
1898....	88.6	79.9	90.8	96.8	100.6	93.0	100.0	98.6	99.3
1899....	91.1	97.1	107.6	109.7	107.0	93.0	100.0	98.6	99.3
1900....	124.4	102.9	127.6	127.8	115.9	107.0	100.0	98.6	99.3
1901....	105.7	88.8	121.4	123.1	117.2	110.4	100.0	98.6	99.3
1902....	111.9	103.0	142.6	123.1	117.2	114.2	100.0	98.6	99.3
1903....	143.7	107.6	147.8	123.1	129.0	115.7	100.0	98.6	99.3
1904....	149.3	123.3	158.4	122.0	129.0	115.7	100.0	98.6	99.3
1905....	190.7	134.7	209.5	121.6	129.0	115.7	100.0	98.6	99.3
1906....	221.8	143.1	221.1	119.8	129.0	129.3	100.0	101.3	100.7
1907....	223.9	144.9	234.3	117.0	129.0	115.7	100.0	101.3	100.7
1908....	223.9	144.9	198.0	111.9	129.0	115.7	100.0	101.3	100.7

[a] Average for the period July, 1894, to December, 1899=100.0

[b] Average for 1896-1899=100.0.

[c] Average for 1890-1898=100.0.

[d] Quotations discontinued.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Metals and implements.						
	Tools.				Wood screws: 1-inch, No. 10, flat head.	Zinc: sheet.	Average, metals and implements.
	Shovels: Ames No. 2.	Trowels: M. C. O., brick, 10½-inch.	Vises: solid box, 50-pound.	Average.			
1890....	100.1	100.0	106.1	107.2	130.5	114.0	119.2
1891....	100.1	100.0	106.1	105.6	132.5	107.7	111.2
1892....	100.1	100.0	109.1	104.5	139.1	103.4	106.7
1893....	100.1	100.0	107.6	103.0	139.1	94.0	100.0
1894....	94.7	100.0	104.0	98.6	103.2	74.4	90.7
1895....	94.7	100.0	97.2	95.3	74.0	85.1	92.7
1896....	99.3	100.0	95.4	95.7	68.4	93.0	93.0
1897....	100.8	100.0	89.7	95.0	56.3	93.0	86.7
1898....	100.8	100.0	84.1	93.9	60.8	103.5	86.6
1899....	109.4	100.0	100.7	101.3	96.2	131.9	114.4
1900....	115.9	100.0	109.4	111.8	120.5	114.8	120.7
1901....	115.9	100.0	128.7	110.0	69.2	104.7	111.5
1902....	118.9	100.0	131.5	114.6	63.0	107.9	117.9
1903....	102.0	100.0	132.7	118.2	72.4	113.3	117.2
1904....	97.3	100.0	109.1	118.4	62.6	105.6	109.6
1905....	96.9	100.0	106.1	127.5	69.9	128.5	122.6
1906....	96.9	100.0	115.9	134.4	69.9	135.0	135.5
1907....	99.7	100.0	147.4	115.7	80.7	140.9	143.2
1908....	99.4	100.0	147.4	113.6	66.2	121.3	125.4

Year	Lumber and building materials.							
	Brick: common domestic.	Carbonate of lead: American, in oil.	Cement.			Doors: pine.	Lime: common.	Linseed oil: raw.
			Portland, domestic.(a)	Rosendale.	Average.			
1890....	118.0	110.6	....	118.8	118.8	125.8	117.5	135.8
1891....	102.6	112.7	....	106.2	106.2	114.4	109.5	106.8
1892....	103.7	114.0	....	109.2	109.2	114.4	111.5	90.0
1893....	104.9	105.5	....	100.0	100.0	112.1	111.5	102.2
1894....	89.9	90.8	....	104.5	104.5	96.1	101.8	115.6
1895....	95.5	91.0	98.6	96.1	97.4	83.5	93.8	115.6
1896....	91.0	89.6	100.2	93.9	97.1	76.6	83.3	81.2
1897....	88.8	92.7	98.5	84.8	91.7	74.3	86.3	72.2
1898....	103.4	94.1	100.1	85.7	92.9	84.6	89.0	86.5
1899....	102.2	98.4	102.6	100.8	101.7	118.2	95.8	94.1
1900....	94.4	108.3	108.1	114.6	111.4	145.5	82.0	138.7
1901....	103.7	99.8	94.7	114.8	104.8	173.1	92.9	140.0
1902....	96.8	93.4	97.7	97.5	97.6	194.1	96.7	130.8
1903....	106.2	106.6	101.6	100.3	101.0	158.2	94.5	91.9
1904....	134.7	103.6	73.2	90.4	81.8	154.6	99.0	91.7
1905....	145.7	109.7	71.5	93.9	82.7	163.2	106.9	103.1
1906....	153.7	119.6	78.9	107.1	93.0	153.5	113.7	89.3
1907....	110.7	120.8	82.4	107.1	94.8	167.5	113.9	95.7
1908....	91.8	112.7	73.1	107.1	89.5	161.3	125.4	96.5

[a] Average for 1895–1899=100.0.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Lumber and building materials.									
	Hemlock.	Maple: hard.	Oak: white.			Pine.				
			Plain.	Quartered.	Average.	White, boards.			Yellow, siding.	Average.
						No. 2 barn.	Uppers.	Average.		
1890....	105.2	100.0	101.2	95.9	98.6	98.1	94.7	96.4	112.4	101.7
1891....	104.1	100.0	101.5	99.8	100.7	99.4	96.7	98.1	108.1	101.4
1892....	102.8	100.0	102.7	98.7	100.7	100.2	98.9	99.6	100.2	99.8
1893....	100.3	100.0	103.5	98.7	101.1	108.9	104.2	106.6	100.2	104.4
1894....	97.9	100.0	99.5	95.2	97.4	106.2	99.7	103.0	100.2	102.0
1895....	93.2	100.0	96.8	99.2	98.0	100.8	98.8	99.8	91.6	97.1
1896....	93.3	100.0	96.8	101.5	99.2	96.4	100.2	98.3	88.9	95.2
1897....	92.0	100.0	96.8	100.3	98.6	92.5	99.5	96.0	89.0	93.7
1898....	98.2	100.0	96.8	97.8	97.3	90.6	99.0	94.8	100.9	96.8
1899....	113.0	100.1	104.1	112.7	108.4	106.9	108.4	107.7	108.5	107.9
1900....	137.9	103.8	109.1	120.1	114.6	125.7	123.5	124.6	112.2	120.5
1901....	125.4	100.8	98.2	110.2	104.2	122.0	129.8	125.9	106.5	119.4
1902....	132.4	107.8	109.2	117.5	113.4	137.3	160.7	149.0	113.7	137.2
1903....	140.4	119.5	119.8	139.3	129.6	140.3	171.8	156.1	113.7	141.9
1904....	142.1	117.0	124.2	150.4	137.3	134.4	174.0	154.2	116.0	141.5
1905....	149.4	115.1	126.5	149.5	138.0	141.2	176.1	158.7	134.9	150.7
1906....	183.0	117.0	134.7	147.5	141.1	173.9	182.0	178.0	158.9	171.6
1907....	186.0	121.7	147.5	149.0	148.3	195.7	200.2	198.0	165.2	187.0
1908....	174.5	119.3	131.7	149.3	140.5	190.3	198.1	194.2	[a] 171.8	[a] 189.0

Year.	Lumber.			Oxide of zinc.	Plate glass: polished.			Putty.	Rosin: good, strained.
	Poplar.	Spruce.	Average.		Area 3 to 5 sq. ft.	Area 5 to 10 sq. ft.	Average.		
1890....	97.2	113.5	102.0	106.3	146.0	134.9	140.5	110.8	96.1
1891....	97.2	99.1	100.7	104.8	143.3	132.9	138.1	110.8	102.4
1892....	97.6	103.5	100.5	106.5	115.7	106.0	110.9	101.9	93.2
1893....	107.2	96.0	102.1	103.3	115.7	106.0	110.9	101.3	87.6
1894....	101.2	88.6	98.7	93.3	90.9	86.7	88.8	99.4	86.9
1895....	98.8	99.3	97.6	87.5	82.6	92.5	87.6	91.8	108.4
1896....	98.8	99.3	97.2	95.8	93.7	104.0	98.9	91.8	121.2
1897....	97.8	97.6	96.2	94.3	55.1	61.7	58.4	91.8	112.0
1898....	95.6	95.8	97.2	99.0	74.4	82.9	78.7	91.8	98.7
1899....	108.5	107.3	107.7	109.5	82.6	92.5	87.6	106.3	93.5
1900....	120.2	121.1	119.3	112.8	93.7	104.0	98.9	120.3	111.3
1901....	117.0	125.4	115.0	109.5	88.2	94.4	91.3	94.9	106.3
1902....	134.2	134.2	127.4	110.0	70.9	79.2	75.1	121.5	112.0
1903....	158.3	133.7	137.4	115.8	72.3	83.1	77.7	89.2	153.9
1904....	160.5	142.9	140.2	115.8	62.7	70.3	66.5	69.6	196.8
1905....	153.7	149.3	144.0	116.3	66.3	71.8	69.1	69.0	237.7
1906....	162.5	178.0	159.7	127.0	76.1	77.7	76.9	75.3	278.8
1907....	185.2	167.3	168.6	134.5	77.2	80.1	78.7	75.9	304.0
1908....	185.8	144.9	[a] 164.0	128.3	58.2	64.8	61.5	75.9	227.9

[a] Including yellow pine flooring, see explanation, page 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	Lumber and building materials.								
	Shingles.			Tar.	Turpentine: spirits of.	Window glass: American, single.			Average, lumber and building materials.
	Cypress.	White pine.	Average.			Firsts, 6 x 8 to 10 x 15 inches.	Thirds, 6 x 8 to 10 x 15 inches.	Average.	
1890....	118.7	102.6	110.7	122.4	122.0	103.6	98.2	100.9	111.8
1891....	115.2	106.9	111.1	131.4	113.5	102.8	97.3	100.1	108.4
1892....	111.7	104.4	108.1	107.9	96.5	92.7	87.7	90.2	102.8
1893....	106.3	102.8	104.6	86.8	89.8	99.4	94.0	96.7	101.9
1894....	99.2	100.2	99.7	90.6	87.7	92.6	89.8	91.2	96.3
1895....	93.9	98.8	96.4	94.8	87.4	74.3	76.5	75.4	94.1
1896....	88.6	96.5	92.6	84.0	82.1	83.8	88.0	85.9	93.4
1897....	83.3	94.6	89.0	87.5	87.5	102.2	107.9	105.1	90.4
1898....	88.6	94.9	91.8	91.1	96.4	122.9	128.8	125.9	95.8
1899....	94.4	98.3	96.4	103.4	137.0	125.9	131.9	128.9	105.8
1900....	101.0	106.9	104.0	113.1	142.7	125.5	127.5	126.5	115.7
1901....	101.0	111.9	106.5	106.4	111.5	191.9	180.4	186.2	116.7
1902....	94.7	123.0	108.9	110.0	141.8	149.6	141.0	145.3	118.8
1903....	91.0	125.1	108.1	139.4	171.0	122.7	118.7	120.7	121.4
1904....	92.2	122.5	107.4	139.4	172.2	134.2	128.0	131.1	122.7
1905....	96.6	119.9	108.3	145.9	187.7	128.5	117.5	123.0	127.7
1906....	114.9	[a] 157.2	136.1	162.5	198.9	135.7	124.0	129.9	140.1
1907....	149.8	[a] 191.5	170.7	193.3	189.8	130.8	123.2	127.0	146.9
1908....	125.4	[a] 143.0	135.2	132.8	135.6	109.7	103.4	106.5	[b] 133.1

Year.	Drugs and chemicals.									
	Alcohol: grain.	Alcohol: wood, refined, 95 per cent.	Alum: lump.	Brimstone: crude, seconds.	Glycerin: refined.	Muriatic acid: 20°.	Opium: natural, in cases.	Quinine: American.	Sulphuric acid: 66°.	Average, drugs and chemicals.
1890....	92.5	119.2	109.0	102.2	126.3	100.0	111.0	133.1	98.9	110.2
1891....	98.9	121.6	94.6	138.2	109.9	94.2	82.4	102.0	91.0	103.6
1892....	95.6	136.0	95.8	116.7	99.8	116.3	70.8	88.7	106.7	102.9
1893....	97.3	135.4	104.2	90.5	96.2	97.1	101.3	87.4	95.5	100.5
1894....	96.1	75.5	101.2	80.1	85.3	84.6	96.8	106.5	82.0	89.8
1895....	104.0	90.9	95.8	75.5	86.1	79.8	78.0	102.0	78.7	87.9
1896....	102.7	89.1	98.2	86.8	119.4	72.1	88.6	97.8	78.7	92.6
1897....	101.6	72.9	99.4	97.2	93.5	104.8	99.2	74.3	106.7	94.4
1898....	103.8	78.6	98.8	110.7	88.5	123.1	141.6	87.2	127.0	106.6
1899....	107.6	80.8	100.6	102.1	95.0	129.8	130.2	120.9	134.8	111.3
1900....	106.5	83.9	104.8	102.2	108.3	129.8	135.6	135.2	134.8	115.7
1901....	109.7	64.2	104.8	106.3	107.5	144.2	136.8	123.0	140.4	115.2
1902....	107.4	67.3	104.8	113.2	103.2	161.5	120.0	104.7	146.1	114.2
1903....	106.9	62.0	103.6	107.9	103.4	153.8	130.6	102.6	142.7	112.6
1904....	108.6	61.6	104.8	105.2	99.8	153.8	116.5	94.8	144.9	110.0
1905....	108.3	70.8	104.8	102.8	88.5	153.8	128.5	85.4	139.3	109.1
1906....	110.0	73.4	104.8	107.1	80.7	129.8	125.0	67.4	112.4	101.2
1907....	112.6	41.8	104.8	103.9	98.9	129.8	209.6	72.2	112.4	109.6
1908....	117.7	44.8	104.8	105.3	106.6	129.8	199.8	63.7	114.6	110.4

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[a] Shingles: red cedar, random width, 16 inches long. For method of computing relative price, see pages 230 and 231.

[b] Including yellow pine flooring. See explanation, page 231.

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Continued.

[Average price for 1890-1899=100.0.]

Year.	House furnishing goods.								
	Earthenware.				Furniture.				
	Plates, cream-colored.	Plates, white granite.	Teacups and saucers, white granite.	Average.	Bedroom sets.	Chairs, bedroom, maple.	Chairs, kitchen.	Tables, kitchen.	Average.
1890....	108.0	109.1	109.6	108.9	113.7	113.0	109.8	103.9	110.1
1891....	105.6	106.9	107.4	106.6	113.7	113.0	109.8	103.9	110.1
1892....	102.3	103.7	104.2	103.4	113.7	110.6	111.1	103.9	109.8
1893....	102.3	103.7	104.2	103.4	104.2	110.6	111.1	103.9	107.5
1894....	101.0	101.9	102.8	101.9	104.2	96.9	91.5	98.7	97.8
1895....	94.6	92.9	94.4	94.0	94.3	96.9	91.5	98.7	95.4
1896....	92.0	89.1	90.1	90.4	82.9	96.9	91.5	95.6	91.7
1897....	92.0	89.1	90.1	90.4	82.9	80.7	91.5	95.6	87.7
1898....	100.4	100.8	98.0	99.7	94.7	82.7	86.6	95.6	89.9
1899....	101.7	102.9	99.2	101.3	95.7	98.9	105.7	100.1	100.1
1900....	106.6	108.1	104.3	106.3	106.6	129.1	136.1	108.1	120.0
1901....	112.5	113.8	109.7	112.0	106.6	113.0	124.2	108.1	113.0
1902....	112.5	113.8	109.7	112.0	111.3	118.4	128.5	108.1	116.6
1903....	115.4	111.4	107.4	111.4	115.3	127.8	130.7	108.1	120.5
1904....	113.8	110.4	106.4	110.2	116.1	129.1	124.7	108.1	119.5
1905....	106.6	102.4	98.8	102.6	117.0	129.1	124.2	108.1	119.6
1906....	106.6	102.4	98.8	102.6	122.8	143.9	134.0	114.3	128.8
1907....	106.6	102.4	98.8	102.6	137.4	161.4	151.4	124.7	143.7
1908....	104.0	102.4	98.8	101.7	134.3	152.0	156.8	124.7	142.1

Year.	Glassware.				Table cutlery.			Wooden ware.			Average, house furnishing goods.
	Nappies, 4-inch.	Pitchers, ½-gallon, common.	Tumblers, ½-pint, common.	Average.	Carvers, stag handles.	Knives and forks, cocobolo handles.	Average.	Pails, oak-grained,	Tubs, oak-grained.	Average.	
1890....	107.1	106.4	101.4	105.0	100.0	127.9	114.0	122.6	122.5	122.6	111.1
1891....	107.1	106.4	112.7	108.7	100.0	127.9	114.0	111.6	116.3	114.0	110.2
1892....	107.1	106.4	107.0	106.8	100.0	113.0	106.5	103.9	103.9	103.9	106.5
1893....	107.1	106.4	107.0	106.8	118.8	90.8	104.8	101.1	97.1	99.1	104.9
1894....	107.1	106.4	107.0	106.8	100.0	90.8	95.4	96.9	95.6	96.3	100.1
1895....	107.1	106.4	104.2	105.9	100.0	90.8	95.4	86.3	92.8	89.6	96.5
1896....	89.3	106.4	101.4	99.0	100.0	90.8	95.4	97.2	92.8	95.0	94.0
1897....	89.3	85.1	95.8	90.1	93.8	82.5	88.2	95.6	92.8	94.2	89.8
1898....	89.3	85.1	90.1	88.2	93.8	90.8	92.3	87.3	92.8	90.1	92.0
1899....	89.3	85.1	73.2	82.5	93.8	94.9	94.4	97.5	93.4	95.5	95.1
1900....	89.3	85.1	101.4	91.9	93.8	94.9	94.4	114.9	107.0	111.0	106.1
1901....	125.0	110.6	101.4	112.3	93.8	107.3	100.6	119.3	107.6	113.5	110.9
1902....	125.0	110.6	104.2	113.3	93.8	107.3	100.6	119.3	107.6	113.5	112.2
1903....	125.0	110.6	99.5	111.7	93.8	107.3	100.6	122.2	107.6	114.9	113.0
1904....	125.0	97.9	90.1	104.3	93.8	110.0	101.9	130.9	107.6	119.3	111.7
1905....	125.0	89.4	84.5	99.6	93.8	110.4	102.1	130.9	107.6	119.3	109.1
1906....	125.0	89.4	84.5	99.6	93.8	99.8	96.8	130.9	107.6	119.3	111.0
1907....	125.0	89.4	84.5	99.6	100.0	107.0	103.5	151.7	118.8	135.3	118.5
1908....	108.9	82.0	74.6	88.7	93.8	89.4	91.8	161.7	122.5	141.9	114.0

TABLE V.—YEARLY RELATIVE PRICES OF COMMODITIES, 1890 TO 1908—Concluded.

[Average price for 1890-1899=100.0.]

Year.	Miscellaneous.							
	Cotton-seed meal.	Cotton-seed oil: summer yellow, prime.	Jute: raw.	Malt: western made.	Paper.			Proof spirits.
					News.	Wrapping, manila.	Average.	
1890....	106.4	113.2	108.1	106.7	127.8	104.0	115.9	91.6
1891....	114.8	117.2	103.3	131.9	113.7	104.0	108.9	96.1
1892....	107.9	101.4	132.3	114.0	113.7	100.9	107.3	93.5
1893....	117.0	149.5	96.4	110.3	106.4	104.7	105.6	93.2
1894....	102.7	106.4	96.1	105.9	108.0	105.6	106.8	98.5
1895....	86.1	89.4	77.7	97.5	103.0	106.0	104.5	105.3
1896....	90.8	82.6	88.9	80.1	92.0	106.3	99.2	104.6
1897....	93.1	77.7	103.9	77.4	90.6	106.3	98.5	102.9
1898....	86.5	75.2	92.5	87.7	73.2	83.0	78.1	106.3
1899....	94.7	87.5	101.7	88.5	69.9	79.2	74.6	108.0
1900....	116.3	116.8	121.2	93.0	94.0	86.8	90.4	108.4
1901....	113.9	117.3	111.4	106.0	75.6	90.8	83.2	111.8
1902....	123.5	133.6	122.0	112.7	80.9	89.9	85.4	114.3
1903....	121.6	130.7	129.2	103.1	84.6	95.1	89.9	111.4
1904....	119.3	103.0	123.7	96.1	89.3	95.8	92.6	110.4
1905....	120.0	88.6	151.0	87.5	80.9	94.9	87.9	109.7
1906....	138.4	118.7	204.5	92.1	73.2	90.4	81.8	112.0
1907....	130.7	160.0	184.4	147.2	83.3	91.5	87.4	114.2
1908....	133.8	134.4	140.4	132.7	82.9	90.4	86.7	118.0

Year.	Rope: manila.	Rubber: Para Island.	Soap: castile, mottled, pure.	Starch: laundry.	Tobacco.			Average, miscellaneous.
					Plug.	Smoking, granulated, Seal of N. C.	Average.	
1890....	160.0	104.6	104.4	106.6	102.2	98.2	100.2	110.3
1891....	111.1	98.8	109.1	122.4	101.2	98.2	99.7	109.4
1892....	122.9	84.5	109.7	107.2	94.0	98.2	96.1	106.2
1893....	98.4	89.5	108.1	105.2	100.1	98.2	99.2	105.9
1894....	82.4	84.2	103.3	105.2	101.0	98.2	99.6	99.8
1895....	78.7	92.7	89.1	104.3	101.0	98.2	99.6	94.5
1896....	71.1	99.9	88.2	89.1	96.1	98.2	97.2	91.4
1897....	67.6	105.6	93.3	86.2	94.9	98.2	96.6	92.1
1898....	90.1	115.8	96.7	86.2	104.3	104.1	104.2	92.4
1899....	117.1	124.3	98.1	86.2	105.4	110.0	107.7	97.7
1900....	141.3	122.6	107.7	97.7	111.9	110.0	111.0	109.8
1901....	116.9	106.1	115.1	104.3	117.6	110.0	113.8	107.4
1902....	144.3	90.8	116.5	130.5	114.6	109.9	112.3	114.1
1903....	122.7	113.1	115.6	123.9	113.6	112.0	112.8	113.6
1904....	125.4	135.8	113.7	106.0	118.6	114.4	116.5	111.7
1905....	127.9	155.2	114.2	94.5	123.7	117.9	120.8	112.8
1906....	134.0	151.5	114.2	105.5	122.0	117.9	120.0	121.1
1907....	138.1	132.8	117.9	116.1	118.6	117.9	118.3	127.1
1908....	108.7	108.8	123.0	124.4	118.6	117.9	118.3	119.9

RECENT REPORTS OF STATE BUREAUS OF LABOR STATISTICS.

KANSAS.

Twenty-second Annual Report of the Bureau of Labor and Industry for 1906. W. L. A. Johnson, Commissioner. viii, 256 pp.

The subjects presented in this report are considered under seven titles, as follows: Wage-earner statistics, 88 pages; labor organization statistics, 20 pages; strikes and labor difficulties, enforcement of labor laws, and legal decisions affecting labor, 29 pages; child labor and factory inspection, 13 pages; industrial opportunities, 18 pages; directory of manufacturers, 22 pages; manufacturing statistics, 13 pages; proceedings of the ninth annual convention of the State Society of Labor, 49 pages.

Wage-earners.—This section presents a summary of returns from employees in four general groups of employment, but the figures shown are of little representative value, because the bureau was forced to rely on what is termed the "mailing system," and only a few wage-earners were willing to take the trouble to fill out and return the schedule sent them. Those employed in railway train service reported average earnings for the year of $1,123.11, cost of living, $614.17, and value of homes owned, $1,830.95. Those employed in railway shops reported average earnings for the year of $771.38, cost of living, $577.22, and average value of homes owned, $1,532.59. Those employed in building trades reported average earnings for the year of $674.79, cost of living, $438.52, and average value of homes owned, $1,518.45. Those employed in miscellaneous trades reported average earnings for the year of $649.11, cost of living, $417.49, and average value of homes owned, $1,403.75.

Labor Organizations.—Under this title the returns from 156 labor organizations are presented in tabular form. The information furnished shows the name, location, and date of organization, membership and affiliation of the various organizations, average months of employment, daily hours of labor, percentage of members unemployed, average wages, and changes in rates of wages; strikes, with duration, members involved, days lost, wage loss, and result; and number of fatal and nonfatal accidents. On June 30, 1906, the membership of the 156 organizations making returns was 12,454. Increase in wages was reported by 56, and decrease in wages by 6 organizations. There were 50 fatal and 339 nonfatal accidents during the year.

Strikes and Labor Difficulties.—The data reported relative to strikes show that 45 strikes were engaged in during the year, 40 organizations reporting that 5,806 members were involved. Thirty-nine organizations reported the number of days lost as 370,477 and the wage loss as $932,890. The total amount of strike benefits paid out by 30 organizations reporting was $30,838. Of the strikes, 26 were successful, 11 were partly successful, and 8 were still pending at the time of making the report.

Manufactures.—Returns received from 2,008 manufacturing establishments indicate an invested capital of $86,054,465; the employment of 32,483 wage-earners, who received in wages during 1906, $20,248,302; and a product valued at $207,789,483, from the use of raw material costing $156,564,241.

Twenty-third Annual Report of the Bureau of Labor and Industry for 1907. W. L. A. Johnson, Commissioner. viii, 351 pp.

The subjects presented in this report are considered under eight titles, as follows: Wage-earner statistics, 100 pages; labor organization statistics, 24 pages; child labor and factory inspection, 93 pages; strikes, labor difficulties, law enforcement, and legal decisions affecting labor, 25 pages; directory of manufacturers, 25 pages; manufacturing statistics, 33 pages; lead and zinc statistics, 10 pages; and proceedings of the tenth annual convention of the State Society of Labor, 33 pages.

Wage-earners.—This section presents a summary of returns from employees in four general groups, but the figures are not representative, because of the small number of wage-earners who reported. Those employed in railway train service reported average earnings for the year of $1,183.74, cost of living, $773.77, and average value of homes owned, $2,382.81. Those employed in railway shops reported average earnings for the year of $795.25, cost of living, $642.03, and average value of homes owned, $1,463.63. Those employed in building trades reported average earnings for the year of $725.63, cost of living, $540.49, and average value of homes owned, $1,561.25. Those employed in miscellaneous trades reported average earnings for the year of $669.99, cost of living, $449.55, and average value of homes owned, $1,122.16.

Labor Organizations.—Under this title the returns from 206 labor organizations are presented in tabular form. The information furnished shows the name, location, and date of organization, membership and affiliation of the various organizations, average months of employment, daily hours of labor, percentage of members unemployed, average wages, and changes in rates of wages; strikes, with duration, members involved, days lost, wage loss, and result; and number of fatal and nonfatal accidents. On June 30, 1907, the membership of the 206 organizations making returns was 13,058. Increase in wages was reported by 103 and decrease in wages by 1 organization. There were 67 fatal and 437 nonfatal accidents during the year.

STRIKES AND LABOR DIFFICULTIES.—The data reported relative to strikes show that 18 strikes were engaged in, involving 875 members of 15 labor organizations. The number of days lost as reported by 12 organizations was 57,199, and the wage loss reported by 10 organizations $113,017. The total amount of strike benefits paid out by 9 organizations reporting was $21,571. Of the strikes, 7 were successful, 2 were partly successful, 4 were lost, and 5 were still pending at the time of making the report.

MANUFACTURES.—Returns received from 1,769 manufacturing establishments indicate an invested capital of $119,983,322; the employment of 53,543 wage-earners, who received in wages during 1907, $33,135,052; using raw materials costing $181,726,766, and producing goods valued at $241,943,553.

Twenty-fourth Annual Report of the Bureau of Labor and Industry for 1908. W. L. A. Johnson, Commissioner. 260 pp.

The subjects presented in this report are considered under seven titles, as follows: Wage-earners statistics, 20 pages; labor organization statistics, 61 pages; child labor and factory inspection, 67 pages; strikes and labor difficulties, enforcement of labor laws, and decisions affecting labor, 46 pages; industrial conditions, 14 pages; manufacturing statistics, 28 pages; review of work of Association of Officials of Bureaus of Labor Statistics of America, 14 pages.

WAGE-EARNERS.—This section presents the results of an investigation of the earnings in one week of 1908 by 56,378 working people, as reported by 1,146 establishments. Of this number, 29.5 per cent received less than $10 for their week's work, 69.3 per cent received less than $15, 87.6 per cent received less than $20, and 97.6 per cent received less than $25.

LABOR ORGANIZATIONS.—Under this title is presented a synopsis of the proceedings of the state Federation of Labor, and in tabular form the returns from 502 labor organizations. The information furnished gives the name, location, date of organization, and membership of the various organizations, average months of employment, daily hours of labor, average wages, and changes in rates of wages; strikes, with duration, members involved, days lost, wage loss, and result; number of fatal and nonfatal accidents. Increase in wages was reported by 26 and decrease in wages by 1 organization. There were 24 fatal and 254 nonfatal accidents during the year.

STRIKES AND LABOR DIFFICULTIES.—The data reported relative to strikes show that 31 strikes were engaged in, 28 labor organizations reporting that 4,101 members were involved. The number of days lost, as reported by 27 organizations, was 222,085, and the wage loss $559,556. The total amount of strike benefits paid out by 29 organizations reporting was $20,482. Of the strikes, 25 were successful, 3 were lost, and 3 were still pending at the time of making the report.

MANUFACTURES.—Returns received from 1,653 manufacturing establishments indicate an invested capital of $125,875,848, the employment of 52,309 wage-earners, who received in wages during the year $30,497,667; using raw materials costing $178,959,544, with a product valued at $233,984,332.

MASSACHUSETTS.

Thirty-eighth Annual Report on the Statistics of Labor for the year 1907. Charles F. Gettemy, Chief of Bureau. xxv, 663 pp.

This report (following a general review of the work of the bureau, etc.) is made up of seven parts, as follows: Part I, Strikes and lockouts for the year ending September 30, 1906, 48 pages; Part II, Recent British legislation affecting workingmen, 202 pages; Part III, Industrial opportunities, 64 pages; Part IV, Statistics of manufactures, 98 pages; Part V, Free employment offices, 56 pages; Part VI, Strikes and lockouts for the year ending September 30, 1907, 86 pages; Part VII, Changes in rates of wages and hours of labor for the year ending September 30, 1907, 98 pages.

STRIKES AND LOCKOUTS FOR THE YEAR ENDING SEPTEMBER 30, 1906.—Of the 222 labor disputes during the year ending September 30, 1906, 212 were strikes, 9 were lockouts, and 1 partook of the nature of both a strike and a lockout. The number of disputes shows an increase of 64 over that of the previous year. The industries in which labor disputes occurred, with the number of disputes in each, are as follows: Boots and shoes, 35; building trades, 44; city and town employees, 4; clothing, 3; conveyances, 4; food, tobacco, and liquors, 4; leather and rubber goods, 3; machinery and metals, 28; paper and paper goods, 4; printing and publishing, 11; stone and clay products, 12; textiles, 50; transportation, 10; water, light, and power, 1; and wooden goods, 9. The following table shows the number of disputes, by causes and results:

STRIKES AND LOCKOUTS, BY CAUSES AND RESULTS, YEAR ENDING SEPTEMBER 30, 1906.

Cause.	Result.					Total.
	Succeeded.	Compromised.	Failed.		Result unknown.	
			Strikers reinstated.	Places filled.		
Against change in working conditions	2		2			4
Against employment of apprentices	1		1			2
Against employment of certain persons	2	2	3	3		10
Against reduction in wages			2	1		3
For change in working conditions	4	1	6	2		13
For closed shop	7		3	11		21
For increase of wages	33	19	14	23	4	93
For recognition of union	1			2		3
For reinstatement of discharged employees	1		6	6		13
For shorter workday	14	1	3	10	4	32
In sympathy				3		3
Miscellaneous	4	4	8	9		25
Total	69	27	48	70	8	222

There were 113 disputes—93 for increase, 3 against reduction, and 17 for other causes—in connection with wages. Of this number, 36 succeeded, 23 were compromised, 50 failed, and for 4 the results are not stated. Of the 222 strikes and lockouts, 69 succeeded, 27 were compromised, 118 failed, and for 8 the results are not stated. The following table shows the number of persons directly involved and working days lost in the 222 disputes:

NUMBER AND DURATION OF STRIKES AND LOCKOUTS, PERSONS DIRECTLY INVOLVED, AND WORKING DAYS LOST, YEAR ENDING SEPTEMBER 30, 1906.

Duration of disputes.	Number of disputes.	Persons directly involved.	Working days lost.
Under 1 day	4	158	80
1 day	37	2,068	3,358
1½ days	1	18	27
2 days	29	2,127	5,648
2½ days	1	185	478
3 days	18	885	6,984
4 days	14	877	40,090
5 days	4	174	995
6 days	26	2,031	16,275
7 days	5	199	3,248
8 days	2	120	960
9 days	4	144	5,391
10 days	2	171	1,710
11 days	3	107	1,147
12 days	8	1,084	13,260
13 days	4	1,313	32,669
14 days	3	130	1,820
15 days	2	264	3,960
16 days	1	26	416
17 days	1	6	782
18 days	4	1,660	46,980
19 days	1	15	855
21 days	2	200	6,240
23 days	2	288	6,624
24 days	2	432	11,568
25 days	2	205	5,125
26 days	4	493	12,974
28 days	1	14	392
29 days	1	178	7,424
30 days	2	80	2,400
31 days	2	200	1,875
32 days	2	139	5,344
33 days	1	370	12,210
34 days	1	27	918
36 days	1	65	2,340
44 days	1	45	1,980
50 days	3	144	12,150
56 days	1	35	19,600
59 days	1	225	6,750
68 days	1	150	10,200
73 days	1	54	5,767
76 days	1	325	28,500
78 days	1	62	7,332
81 days	1	350	25,750
100 days	2	392	39,200
101 days	1	9	909
Indefinite	11	324	
Total	222	18,568	420,705

STRIKES AND LOCKOUTS FOR THE YEAR ENDING SEPTEMBER 30, 1907.—Of the 209 labor disputes during the year ending September 30, 1907, 205 were strikes and 4 were lockouts. The number of disputes shows a decrease of 13 over that of the previous year. The industries in which labor disputes occurred, with the number of disputes in each, follow: Building and stone working, 49; clothing, 41; food, liquors, and tobacco, 4; leather and rubber goods, 2; metals, machinery, and shipbuilding, 28; paper and paper goods, 5; printing and allied trades, 1; public employment, 2; textiles, 50; transportation, 19; wood working and furniture, 5; and miscellaneous, 3. The following table shows the number of disputes, by causes and results:

STRIKES AND LOCKOUTS, BY CAUSES AND RESULTS, YEAR ENDING SEPTEMBER 30, 1907.

Cause.	Result.				Total.
	Succeeded.	Compromised.	Failed.		
			Strikers reinstated.	Places filled.	
Against change in working conditions	1	1	6		8
Against employment of certain persons	1		2	2	5
Against reduction in wages				3	3
For change in working conditions			3	2	5
For closed shop	3		4	6	13
For increase of wages	28	11	34	34	107
For recognition of union	2		1	3	6
For reinstatement of discharged employees			4	5	9
For shorter workday	5	1	4	4	14
In sympathy	3		2	5	10
Miscellaneous	4	3	10	12	29
Total	47	16	70	76	209

There were 121 wage disputes—107 for increase, 3 against reduction, and 11 for other causes in connection with wages. Of this number, 30 succeeded, 13 were compromised, and 78 failed. Of the 209 strikes and lockouts, 47 succeeded, 16 were compromised, and 146 failed. The following table shows the number of persons directly involved and working days lost in the 209 disputes:

NUMBER AND DURATION OF STRIKES AND LOCKOUTS, PERSONS DIRECTLY INVOLVED, AND WORKING DAYS LOST, YEAR ENDING SEPTEMBER 30, 1907.

Duration of disputes.	Number of disputes.	Persons directly involved.	Working days lost.	Duration of disputes.	Number of disputes.	Persons directly involved.	Working days lost.
1 day	20	482	576	9 days	6	827	12,822
1½ days	2	155	233	10 days	7	785	41,050
2 days	27	993	2,186	11 days	6	422	9,257
3 days	18	873	5,964	12 days	7	292	3,538
4 days	17	780	6,498	13 days	4	326	5,568
5 days	14	763	6,857	14 days	3	129	4,112
6 days	21	1,391	10,975	15 days	2	100	1,850
7 days	4	99	714	17 days	5	291	9,473
8 days	6	242	3,736	18 days	4	84	1,612

NUMBER AND DURATION OF STRIKES AND LOCKOUTS, PERSONS DIRECTLY INVOLVED, AND WORKING DAYS LOST, YEAR ENDING SEPTEMBER 30, 1907—Conc'd.

Duration of disputes.	Number of disputes.	Persons directly involved.	Working days lost.	Duration of disputes.	Number of disputes.	Persons directly involved.	Working days lost.
19 days	4	1,303	43,189	50 days	1	22	1,100
20 days	1	15	300	57 days	1	1,738	48,165
21 days	1	10	273	61 days	1	70	4,270
22 days	1	42	545	73 days	1	277	20,221
23 days	2	92	2,116	78 days	1	20	1,560
24 days	1	20	786	80 days	1	20	1,600
25 days	2	102	2,575	82 days	1	30	2,460
27 days	1	257	6,939	83 days	2	100	8,300
29 days	1	160	4,640	89 days	1	311	27,923
30 days	1	67	2,010	90 days	1	392	11,995
31 days	2	54	1,494	119 days	1	97	4,785
33 days	1	41	1,869	168 days	1	159	26,440
34 days	3	394	13,396				
43 days	1	211	11,923	Total	209	15,050	378,383
49 days	1	12	588				

Recent British Labor Legislation.—In Part II is given the results of an exhaustive inquiry made by the British royal commission on trade disputes and combinations, the text of the principal acts affecting the legal status of trade unions, and the most recent legislation on the subject of workmen's compensation for injuries sustained in the course of employment.

Industrial Opportunities not yet Utilized.—This chapter consists of returns from the boards of selectmen of 297 towns, or 92.5 per cent of all the towns of the State. The purpose of the investigation was to ascertain the advantages offered by these towns for the establishment of some industry. From these returns a series of eight tables is presented showing as follows: Land available for manufacturing purposes, railroad facilities, and water power available; local facilities, such as gas and electric-light plants, electric railways, etc.; raw materials and natural products; idle workshops and factories; industries wanted, by towns; industries wanted, by industries; summer resorts; and tax rebates.

Statistics of Manufactures, 1905 and 1906.—This is the twenty-first of a series of annual reports on manufacturing statistics. The statistics presented are compiled from the returns of 5,055 establishments, each of which made a report for the two years under consideration. Comparative tables are given, which show, for the years 1905 and 1906, the number of establishments controlled by private firms, by corporations, and by industrial combinations, together with the number of partners and stockholders interested therein; the capital devoted to production; the cost value of stock and materials used, and the selling value of the goods made; the smallest, greatest, and average number of persons employed, and aggregate employees, by months; the total wages paid during each year, average yearly earnings per employee, and classified weekly wages in selected industries, by sex and age; average days in operation during each year, and average proportion of business done. Seventy-nine classified industries are represented.

The principal facts as to ownership are shown in the following table:

FIRMS, CORPORATIONS, AND INDUSTRIAL COMBINATIONS, AND PARTNERS AND STOCKHOLDERS IN 5,055 IDENTICAL ESTABLISHMENTS, 1905 AND 1906.

Year.	Firms.	Corporations.	Industrial combinations.	Partners.	Stockholders.	Average partners to a firm.	Average stockholders to a corporation.
1905	3,094	1,866	95	4,751	60,659	1.54	33.93
1906	2,979	1,981	95	4,527	61,961	1.53	32.68

From the above table it will be seen that the tendency continues to be toward an increase of number of establishments controlled by corporations and a decrease of establishments under private control.

The following table presents statistics separately for 9 principal industries, in aggregate for 70 other industries, and totals for the 79 industries reported on for the years 1905 and 1906:

STATISTICS OF MANUFACTURES, 1905 AND 1906.

Industry.	Number of establishments.	Value of stock used.		Increase (+) or decrease (−).	
		1905.	1906.	Amount.	Per cent.
Boots and shoes	636	$118,749,878	$134,433,937	+$15,684,059	+13.21
Carpetings	13	7,906,516	8,912,065	+ 1,005,549	+12.72
Cotton goods	169	84,192,530	98,070,194	+ 13,877,664	+16.48
Leather	110	29,698,338	36,058,043	+ 6,359,705	+21.41
Machines and machinery	381	24,698,054	28,232,451	+ 3,534,397	+14.31
Metals and metallic goods	435	29,678,279	36,594,457	+ 6,916,178	+23.30
Paper	87	21,298,649	23,036,629	+ 1,737,980	+ 8.16
Woolen goods	145	34,428,856	35,901,882	+ 1,473,026	+ 4.28
Worsted goods	45	38,849,302	42,322,193	+ 3,472,891	+ 8.94
Other industries (70)	3,034	262,647,302	295,578,703	+ 32,931,401	+12.54
Total	5,055	652,147,704	739,140,554	+ 86,992,850	+13.34

Industry.	Value of goods made.			Total wages paid.		
	1905.	1906.	Per cent of increase (+) or decrease (−).	1905.	1906.	Per cent of increase (+) or decrease (−).
Boots and shoes	$182,644,882	$207,263,253	+13.48	$38,034,515	$41,815,689	+ 9.94
Carpetings	12,056,931	13,454,549	+11.59	2,368,190	2,515,589	+ 6.22
Cotton goods	144,790,278	169,891,173	+17.34	35,097,153	39,492,044	+12.52
Leather	40,923,156	46,439,029	+13.48	4,228,230	4,631,635	+ 9.54
Machines and machinery	62,481,269	71,875,755	+15.04	21,137,230	23,950,700	+13.31
Metals and metallic goods	57,823,499	68,563,678	+18.57	14,497,583	16,246,101	+12.06
Paper	36,244,054	39,080,029	+ 7.82	6,062,849	6,392,865	+ 5.44
Woolen goods	59,533,901	60,718,658	+ 1.99	11,167,212	11,275,391	+ .97
Worsted goods	60,411,605	64,328,151	+ 6.48	8,700,925	9,921,716	+14.03
Other industries (70)	477,126,205	529,813,259	+11.04	85,841,159	95,837,705	+11.65
Total	1,134,035,780	1,271,427,534	+12.12	227,079,435	252,079,435	+10.98

In the above table the 9 specified industries, the aggregate for 70 other industries, and the total for the 79 industries all show an increase in value of materials and products and in wages paid in 1906 over 1905. The greatest increases in wages paid in the 9 specified industries appear in worsted goods and in machines and machinery. The greatest increase in value of stock used and in goods made was in metals and metallic goods.

The capital devoted to production in the 79 industries in 1905 amounted to $616,355,050 and in 1906 to $651,221,011.

Data relative to employees, earnings, and days in operation are presented in the table following, the establishments considered being the same as in the table preceding:

AVERAGE NUMBER OF EMPLOYEES, AVERAGE YEARLY EARNINGS, AND AVERAGE DAYS IN OPERATION IN 9 PRINCIPAL INDUSTRIES, IN 70 OTHER INDUSTRIES, AND IN ALL INDUSTRIES, 1905 AND 1906.

Industry.	Average number of employees.			Average yearly earnings.			Average days in operation.		
	1905.	1906.	Per cent of increase (+) or decrease (−).	1905.	1906.	Per cent of increase (+) or decrease (−).	1905.	1906.	Per cent of increase (+) or decrease (−).
Boots and shoes	70,497	76,271	+ 8.19	$539.52	$548.25	+1.62	294.01	293.90	−0.04
Carpetings	5,446	5,633	+ 3.43	434.85	446.58	+2.70	300.71	301.09	+ .13
Cotton goods	95,680	99,089	+ 3.56	366.82	398.55	+8.65	294.95	303.56	+2.92
Leather	8,339	9,279	+11.27	507.04	499.15	−1.56	299.28	299.59	+ .10
Machines and machinery	36,568	40,441	+10.59	578.03	592.24	+2.46	298.36	299.54	+ .40
Metals and metallic goods	25,839	28,484	+10.24	561.07	570.36	+1.66	296.95	300.36	+1.15
Paper	12,869	13,364	+ 3.85	471.12	478.36	+1.54	291.47	296.18	+1.62
Woolen goods	25,831	25,219	− 2.37	432.32	447.10	+3.42	296.84	294.53	− .78
Worsted goods	21,238	22,544	+ 6.15	409.69	440.10	+7.42	303.45	302.81	− .21
Other industries (70)	173,798	188,964	+ 8.73	493.91	507.17	+2.68	293.45	294.45	+ .34
Total	476,105	509,288	+ 6.97	477.07	494.96	+3.75	295.16	297.46	+ .78

Only one of the principal industries shows a decrease in the average number of employees, all but one show an increase in average yearly earnings, and but three show a decrease in average days in operation in 1906 as compared with 1905. In all industries considered together an increase is shown in the three items of average employees, average yearly earnings, and average days in operation.

For the total 79 industries the proportion of business done of full or maximum production was 71.49 per cent in 1905 and 73.80 per cent in 1906; the proportion of actual running time of possible working time was 96.78 per cent in 1905 and 97.21 per cent in 1906.

The table following shows the number of employees (wage-earners) earning the indicated weekly wages. The number of employees given is the number reported in each industry for the week in which the largest number was employed, and does not, therefore, agree with the number shown in the table preceding.

NUMBER OF MALE AND FEMALE ADULTS AND OF YOUNG PERSONS IN 79 INDUSTRIES, BY CLASSIFIED WEEKLY WAGES, 1905 AND 1906.

Classified weekly wages.	1905.				1906.			
	Persons 21 years of age and over.		Young persons (under 21).	Total.	Persons 21 years of age and over.		Young persons (under 21).	Total.
	Males.	Females.			Males.	Females.		
Under $5	8,585	16,073	26,230	50,888	7,069	12,755	22,965	42,809
$5 and under $6	9,036	17,445	16,824	43,305	7,370	16,211	18,249	41,830
$6 and under $7	18,034	24,889	13,493	56,416	16,305	24,562	15,499	56,366
$7 and under $8	28,163	22.316	7,209	57,688	26,183	22,679	9,923	58,785
$8 and under $9	29,097	18,268	3,645	51,010	31,175	20,229	5,607	57,011
$9 and under $10	42,062	14,228	2,503	58,793	44,908	16,369	3,517	64,794
$10 and under $12	53,226	12,061	1,301	66,588	58,621	14,893	2,073	75,587
$12 and under $15	63,183	5,729	491	69.403	69,202	7,067	835	77,104
$15 and under $20	57,854	2,244	122	60,220	63,575	2,672	220	66,467
$20 and over	20,446	261	8	20,715	23,315	430	26	23,771
Total	329,686	133,514	71,826	535,026	347,743	137,867	78,914	564,524

Comparing the totals for each class, it is seen that there was a falling off in 1906 in the numbers earning under $7 per week as compared with 1905, while the number in each of the other wage classes showed an increase in 1906 as compared with 1905.

In order to show the actual result of the productive forces of industry, the element of cost of material must be deducted from the total value of product, and the remainder will show only the industry product, or the new values created. This has been done in the case of the nine leading industries, also the division of industry product between the wage fund and the fund devoted to profit and minor expenses, as insurance, interest, rent, freight, commissions, salaries, etc. The results for the years 1905 and 1906 appear in the following table:

INDUSTRY PRODUCT, WAGES, AND PROFIT AND MINOR EXPENSES IN 9 SELECTED INDUSTRIES, 1905 AND 1906.

1905.

Industry.	Industry product.	Wages.	Profit and minor expenses.	Per cent of industry product.	
				Paid in wages.	Devoted to profit and minor expenses.
Boots and shoes	$63,895,004	$38,034,515	$25,860,489	59.53	40.47
Carpetings	4,150,415	2,368,190	1,782,225	57.06	42.94
Cotton goods	60,597,748	35,097,153	25,500,595	57.92	42.08
Leather	11,224,818	4,228,230	6,996,588	37.67	62.33
Machines and machinery	37,783,215	21,137,230	16,645,985	55.94	44.06
Metals and metallic goods	28,145,220	14,497,583	13,647,637	51.51	48.49
Paper	14,945,405	6,062 849	8,882,556	40.57	59.43
Woolen goods	25,105,045	11,167 212	13,937,833	44.48	55.52
Worsted goods	21,562,303	8,700,925	12,861,378	40.35	59.65

INDUSTRY PRODUCT, WAGES, AND PROFIT AND MINOR EXPENSES IN 9 SELECTED INDUSTRIES, 1905 AND 1906—Concluded.

1906.

Industry.	Industry product.	Wages.	Profit and minor expenses.	Per cent of industry product.	
				Paid in wages.	Devoted to profit and minor expenses.
Boots and shoes	$72,829,316	$41,815,689	$31,013,627	57.42	42.58
Carpetings	4,542,484	2,515,589	2,026,895	55.38	44.62
Cotton goods	71,820,979	39,492,044	32,328,935	54.99	45.01
Leather	10,380,986	4,631,635	5,749,351	44.62	55.38
Machines and machinery	43,643,304	23,950,700	19,692,604	54.88	45.12
Metals and metallic goods	31,969,221	16,246,101	15,723,120	50.82	49.18
Paper	16,043,400	6,392,865	9,650,535	39.85	60.15
Woolen goods	24,816,776	11,275,391	13,541,385	45.43	54.57
Worsted goods	22,005,958	9,921,716	12,084,242	45.09	54.91

In 5 of the 9 industries, in 1905, more than one-half of the industry product was paid out in wages, the largest showing being in boots and shoes, with 59.53 per cent, followed by cotton goods, with 57.92 per cent, and carpetings, with 57.06 per cent. The industry devoting the lowest proportion of the industry product to labor was worsted goods, with 40.35 per cent. In 1906, also, 5 industries paid out more than one-half of the industry product in wages. The boot and shoe industry paid the highest proportion, 57.42 per cent, and the paper industry the lowest, 39.85 per cent.

FREE EMPLOYMENT OFFICES.—During the first year of its existence, which ended November 30, 1907, the free employment office located in Boston received applications for positions from 25,350 males and 9,600 females. Applications were received from employers for the help of 19,965 males and 13,731 females. Positions were offered 15,296 males and 8,372 females. Reports were received that positions had been filled by 8,671 males and 5,809 females at an average cost of $1.35 per position.

RATES OF WAGES AND HOURS OF LABOR.—During the year ending September 30, 1907, increase in wages was given to 173,621 employees, averaging $1.10 per week, without being the result of strikes. In the case of 3,209 other employees increases were granted, averaging $0.88 per week, as the result of strikes. Decrease in wages was reported for 319 employees at an average of $0.69 per week. During the same period hours of labor were shortened for 26,244 employees and lengthened for 298, resulting in an average reduction of 3.9 hours a week for each employee affected.

Twenty-second Annual Report on the Statistics of Manufactures for the year 1907. xxxvi, 82 pp.

In former years the statistics of manufactures were arranged in the form of comparative tables, the comparisons being limited in each report to returns of such identical establishments as had made report to the Bureau for two years in succession. In the present year a new plan has been adopted, the reports of all establishments reporting being published as an annual census of manufactures, regardless of whether or not returns were received from all covering the previous year. Thus for the year 1907 returns are given for 5,671 establishments, only 5,109 of which made report for the preceding year. Tables are presented showing for these 5,671 establishments the amount of capital devoted to production; the cost value of stock and materials used and the selling value of goods made; the smallest, greatest, and average number of persons employed; the total wages paid, average yearly earnings per employee, and classified weekly wages; the days in operation and the proportion of business done. For the nine leading industries comparative tables are also given showing the per cent of employees earning each classified wage rate in 1897 and in 1907.

The following table presents statistics separately for 9 principal industries, in aggregate for all other industries, and totals for the State for the year 1907.

STATISTICS OF MANUFACTURES, 1907.

Industry.	Number of establishments.	Capital devoted to production.	Value of stock used.	Value of goods made.	Total wages paid.
Boots and shoes	729	$39,296,256	$153,763,472	$233,025,182	$46,079,854
Carpetings	14	7,739,091	10,094,317	15,162,507	2,855,968
Cotton goods	178	149,053,322	108,137,762	193,276,574	45,304,115
Leather	122	27,178,660	34,364,843	46,903,784	5,284,362
Machines and machinery	407	67,515,260	31,051,035	79,342,230	26,230,640
Metals and metallic goods	477	33,693,146	38,872,929	73,124,952	17,982,602
Paper	89	27,987,312	23,927,908	42,707,680	6,735,401
Woolen goods	146	36,285,276	35,221,467	58,262,898	11,170,079
Worsted goods	49	47,544,641	46,906,549	74,667,461	12,062,680
Other industries	3,460	263,264,792	297,500,676	547,957,987	104,485,412
Total	5,671	699,557,756	779,840,958	1,364,431,255	278,191,113

Data relative to employees, earnings, days in operation, and proportion of business done are presented in the table following:

AVERAGE NUMBER OF EMPLOYEES, AVERAGE YEARLY EARNINGS, AVERAGE DAYS IN OPERATION, AND PROPORTION OF BUSINESS DONE IN 9 PRINCIPAL INDUSTRIES AND IN ALL INDUSTRIES, 1907.

Industry.	Average number of employees.			Average yearly earnings.	Average days in operation.	Proportion of business done.
	Males.	Females.	Total.			
Boots and shoes	55,036	26,622	81,658	$564.30	290.64	69.51
Carpetings	3,386	2,854	6,240	457.69	297.38	85.93
Cotton goods	54,102	48,323	102,425	442.32	300.62	89.87
Leather	9,993	163	10,156	520.32	298.08	69.71
Machines and machinery	42,083	699	42,782	613.12	296.41	74.43
Metals and metallic goods	27,592	3,445	31,037	579.39	296.68	71.50
Paper	8,582	4,964	13,546	497.22	289.46	89.06
Woolen goods	15,776	8,300	24,076	463.95	286.18	72.56
Worsted goods	14,179	12,497	26,676	452.19	295.04	85.16
Other industries	136,742	64,644	201,386	518.83	....	....
Total	367,471	172,511	539,982	515.18	293.54	70.96

The table following shows the number of employees (wage-earners) of each sex earning the indicated weekly wages. The number of employees given is the number reported in each industry for the week in which the largest number was employed, and does not, therefore, agree with the number shown in the table preceding.

NUMBER OF MALE AND FEMALE ADULTS AND OF YOUNG PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, BY CLASSIFIED WEEKLY WAGES, 1907.

Classified weekly wages.	Persons 21 years of age and over.		Young persons (under 21).	Total.
	Males.	Females.		
Under $3	1,713	2,149	2,014	5,876
$3 and under $5	4,154	8,816	18,051	31,021
$5 and under $6	6,594	15,122	18,208	39,924
$6 and under $7	12,898	23,301	18,310	54,509
$7 and under $8	23,835	23,788	11,849	59,472
$8 and under $9	32,076	21,512	7,373	60,961
$9 and under $10	45,653	18,546	4,847	69,046
$10 and under $12	64,759	20,086	3,331	88,176
$12 and under $15	76,313	10,507	1,220	88,040
$15 and under $20	74,664	3,214	309	78,187
$20 and under $25	19,980	472	42	20,494
$25 and over	8,517	164	3	8,684
Total	371,156	147,677	85,557	604,390

NEBRASKA.

Tenth Biennial Report of the Bureau of Labor and Industrial Statistics for the years 1905 and 1906. Burrett Bush, Deputy Commissioner. 221 pp.

The subjects presented in this report are: Summary of the work of the bureau, 5 pages; child labor, 24 pages; directory of manufacturers, 147 pages; crop statistics, 41 pages.

CHILD LABOR.—In this section of the report are given arguments for the restriction of child labor and the text of recent legislation upon the subject in the State.

NORTH DAKOTA.

Eighth and Ninth Biennial Reports of the Commissioner of Agriculture and Labor for the term ending June 30, 1906. W. C. Gilbreath, Commissioner. 117 pp.

The subjects presented in this report are: Statistics of agriculture, 60 pages; orchards and fruit, 4 pages; live stock, 8 pages; vital statistics, 4 pages; farm labor, 4 pages; coal mines, 2 pages; dairy industry, 13 pages.

FARM LABOR.—Tables show for each county the number of male and female employees reported in 1902, 1903, 1904, and 1905, their average monthly wages, and the total amount paid in wages. The lowest average monthly wages reported in any county in 1905 was $20.46 for males and $8 for females; the highest average was $40 for males and $21.84 for females.

Coal Mines.—Returns are given from the coal mines of the State for each year of the period covered. In 1905, 41 mines reported the employment of 209 persons and the production of 237,474 tons of coal.

PENNSYLVANIA.

Annual Report of the Secretary of Internal Affairs of the Commonwealth of Pennsylvania. Vol. XXXV, 1907. Part III, Industrial Statistics. John L. Rockey, Chief of Bureau. 278 pp.

In the first of the two parts composing this report brief special articles are presented upon the subjects of the unemployed, prices and cost of living, farm products and wages, the liquor business, the cigar industry, the Portland cement industry, the clays of the State, and industrial accidents.

Industrial Accidents.—There occurred, during 1907, in anthracite mining 607 fatal and 1,746 nonfatal accidents, in bituminous mining 437 fatal and 1,678 nonfatal accidents, in the iron and steel industry 176 fatal and 1,179 nonfatal accidents, in the pig iron industry 72 fatal and 623 nonfatal accidents, in other industries 130 fatal and 914 nonfatal accidents, making a total loss of 1,422 lives and the injury of 6,140 persons.

General Statistics of Manufactures and Mining.—The second section of the report embraces data gathered from 3,133 establishments of the State engaged in the manufacturing and the mining industries, giving a record of the capital invested, value of products, average value of product per employee, days in operation, number of working people (men, women, and minors), aggregate wages paid, average yearly earnings, average daily wages, etc. Data relative to strikes and lockouts are reported for coal mining and for the iron and steel, tin plate, and a few minor industries. The information gives for the various disputes cause of dispute, number of persons involved, days lost, and result. Data are further presented for the different industries showing the number of establishments making returns and giving statistics pertaining to number of employees owning their homes, average rent paid by those renting, working hours per week, nationality of employees, accidents, causes of time lost, and trade conditions.

The 3,133 establishments considered in this investigation had invested in plants and working capital a total of $992,560,486, and the market value of production for the year aggregated $1,807,276,403. The various industries were in operation during the year an average of 278 days and employed a total of 790,809 wage-earners (689,868 men, 74,691 women, and 26,250 minors), to whom were paid in wages the sum of $422,984,854 to the men, $23,258,944 to the women, and $5,907,367 to the minors. The average yearly earnings of all wage-earners was $571.76 (of the men $642.13, of the women $311.40, and of the minors $225.04). The average daily wage of all employees was $2.05. For each employee the average value of product for the year amounted to $2,279.73.

Iron, Steel, and Tin-Plate Production.—The following summary statements show the more important items for the year 1907 relating to the production of pig iron, steel, rolled iron and steel, and tin plate:

PIG IRON.

Capital invested	$143,859,428
Gross tons of production	11,311,985
Realized value	$206,443,155
Value of basic material	$100,308,832
Average days in operation	326
Average number of adult male employees	18,949
Aggregate wages paid adult male employees	$12,671,854
Average yearly earnings of adult male employees	$668.73
Average daily wages of adult male employees	$2.05
Cost of labor per ton	$1.10
Tonnage per man per day	1.8

STEEL.

Gross tons of production:	
Bessemer	4,349,431
Open-hearth, acid process	1,046,584
Open-hearth, basic process	6,823,415
Crucible and other processes	90,606
Total	12,310,036

ROLLED IRON AND STEEL.

Capital invested	$346,361,420
Gross tons of production:	
Muck and scrap bar	140,399
Slabs, blooms, billets, tin-plate and sheet bars, etc	2,807,100
Rails	1,323,739
Iron and steel structural shapes	1,259,500
Cut nails and spikes	29,279
Plates and sheets [a]	2,464,554
Other rolled products	4,928,476
Total	12,953,047
Value of product (not including the black-plate works)	$504,167,225
Average number of employees (not including those in black-plate works)	137,712
Average number of adult male employees (not including those in black-plate works)	135,998

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[a] Including 283,815 tons of black plate and other sheets made by the black-plate works.

Aggregate wages paid all employees	$91,413,384
Aggregate wages paid adult male employees	$90,926,567
Average days in operation	298
Average yearly earnings of all employees	$663.80
Average yearly earnings of adult male employees	$668.59
Average daily wages of all employees	$2.23
Average daily wages of adult male employees	$2.25
Average value per ton	$43.20
Cost of labor per ton	$7.83

TIN PLATE (BLACK-PLATE WORKS).

Capital invested (16 plants)	$8,198,605
Pounds of production of black plate (tinned, not tinned, and terne)	633,902,496
Value of production of black plate	$22,980,589
Pounds of production of sheets and plates other than black	1,842,270
Value of production of sheets and plates other than black	$55,147
Average number of employees	7,365
Average number of adult male employees	7,087
Aggregate wages paid all employees	$5,319,694
Aggregate wages paid adult male employees	$5,233,223
Average days in operation	197
Average yearly earnings of all employees	$722.29
Average yearly earnings of adult male employees	$752.54
Average daily wages of all employees	$3.67
Average daily wages of adult male employees	$3.82

TIN PLATE (DIPPING WORKS).

Capital invested (4 plants)	$1,387,080
Pounds of production of tin and terne plate	29,082,916
Value of product	$1,520,409
Average number of employees	238
Average number of male employees	200
Aggregate wages paid all employees	$123,876
Aggregate wages paid male employees	$113,302
Average days in operation	276
Average yearly earnings of all employees	$520.49
Average yearly earnings of male employees	$566.51
Average daily wages of all employees	$1.89
Average daily wages of male employees	$2.05

Returns from 56 pig-iron companies showed that 629 wage-earners owned their homes, that the average annual rental for those paying rent was $79, that the average working hours were 96 per week, and that of the 10,844 persons for whom nationality was reported 2,690 were Americans. Returns from 170 iron and steel companies showed that 4,912 wage-earners owned their homes, that the average annual rental for those paying rent was $134, and that of the 72,975 employees for whom nationality was reported 34,898 were Americans. Returns from 11 companies in the tin-plate industry showed that 65 wage-earners owned their homes, that the average annual rental for those paying rent was $200, that the average hours of work per week were 55, and that of the 2,802 employees for whom nationality was reported 2,165 were Americans

Coal Mining.—The following statement presents a summary of the operations of the anthracite and of the bituminous coal mines in the State during 1907, the coke workers not being included:

ANTHRACITE AND BITUMINOUS COAL-MINE OPERATIONS, 1907.

Items.	Anthracite coal.	Bituminous coal.
Number of mines in operation	294	1,311
Miners	41,075	118,115
Inside workmen	72,440	26,940
Outside workmen	48,226	17,859
Aggregate wages paid to miners	$29,462,021	$67,974,817
Aggregate wages paid to inside workmen	$38,863,929	$18,922,526
Aggregate wages paid to outside workmen	$23,729,064	$11,611,504
Average days in operation	243	268
Average yearly earnings (all employees)	$574.44	$603.72
Average yearly earnings (miners only)	$717.05	(a)
Average daily wages (all employees)	$2.36	$2.25
Average daily wages (miners only)	$2.95	(b)
Number of tons mined and marketed	65,477,649	149,390,965
Market value of product	$156,154,760	$174,035,853
Average tons mined per miner per year	1,741	1,265
Average tons mined per miner per day	7.16	4.70

[a] Miners, pick, $601.91; miners, machine, $540.27.
[b] Miners, pick, $2.24; miners, machine, $2.01.

In addition to the above coal-mining operations there were 53 plants, employing 1,852 persons, engaged in washing anthracite coal from culm banks at the mines. The plants washed 3,485,541 tons of coal, which had a market value of $3,201,495. Wages were paid aggregating $825,319, or an average yearly earning per employee of $445.63. Also there were 34 plants engaged in dredging coal from the Susquehanna and Schuylkill rivers, giving an average employment of 113 days to 141 men, to whom wages amounting to $31,375 were paid. There were 65,538 tons of coal raised, having a market value of $56,929.

Of the 1,311 bituminous coal mines there were 342 from which coal was coked. During the year there were 45,127 coke ovens in service, producing 34,625,377 tons of coke, of a value at plant of $50,040,427. There were 12,578 coke workers, to whom were paid wages amounting to $7,251,731, or an average yearly wage of $586.85.

Of 85,312 employees of the anthracite mines for whom nationality was reported 28,009 were Americans. Returns from 475 bituminous coal companies (that do not coke coal) showed that 7,320 wage-earners owned their homes, that the average annual rental for those paying rent was $67, and that of the 79,660 employees for whom nationality was reported 21,987 were Americans and 12,884 were Slavonians. Returns from 98 bituminous coal companies (that coke coal) showed that 2,419 wage-earners owned their homes, that the average annual rental for those paying rent was $52, that the average hours of work per week were 54, and that of the employees for whom nationality was reported 8,185 were Slavonians and 7,097 were Americans.

TEXTILE INDUSTRIES.—Returns made in 1907 by 639 establishments engaged in the textile industries in Philadelphia showed an invested capital of $75,517,539, and for the year a product of the market value of $130,503,116. The establishments were in operation during the year an average of 289 days, employing 62,293 wage-earners (25,976 males, 31,246 females, and 5,071 minors), to whom were paid wages amounting to $26,778,586 ($14,638,340 to the men, $11,102,377 to the women, and $1,037,869 to the children). The average yearly earnings per employee in the industry were $429.88—the average for the men being $563.53; for the women, $355.32, and for the children, $204.66. The average daily wages per employee were $1.49—the average for the men being $1.95; for the women, $1.23, and for the children, $0.71. The average value of product per employee was $2,094.99.

RECENT FOREIGN STATISTICAL PUBLICATIONS.

BELGIUM.

Monographies Industrielles (Aperçu Économique Technologique et Commercial). Industries céramiques, 1907. xvi, 242 pp. *Fabrication et Travail du Verre, 1907.* xxiv, 263 pp. *Industries du Caoutchouc et de l'Amiante, 1907.* 237 pp. *Construction des Machines et Appareils Electriques, 1908.* 344 pp. Ministère de l'Industrie et du Travail. Office du Travail et Inspection de l'Industrie.

These volumes are a part of a series of monographs being prepared by the Belgian labor office on conditions existing in selected industries or groups of industries, considered from the economic, technical, and commercial standpoints. Monographs of this series on cotton, flax, hemp, jute, and linen spinning and on the manufacture of paper and pasteboard have been mentioned in previous issues of the bulletin.([a])

Ceramic Industries.—An introductory chapter is devoted to a statistical account of the industry, derived partly from the industrial census of 1896 and partly from subsequent investigation. It shows the number of establishments classified by date of foundation; geographical location, and motive force employed; and the number of employees, their sex, ages, hours of labor, and mode of remuneration. The first chapter deals with ceramic products in general, their classification, and the materials employed in their composition. The second chapter describes the raw materials of Belgian origin and their extraction and exploitation. Subsequent chapters are devoted to the manufacture of bricks and tiles, fire-clay products, matt-surfaced and enameled stoneware, common vases, pots, pipes, and articles of fancy terra-cotta, faïence or crockery, porcelain, and bricks made of schist. Included in each chapter is a description of the materials used and of the hand and mechanical processes employed in the manufacture of the finished product, the quantity, value, and destination of output, and statistics of imports.

Manufacture of Glass.—An introductory chapter is devoted to a statistical account of the industry similar to that given in the volume on ceramic industries. The first chapter in the main body of the work describes in a general way the composition and properties of glass, and classifies the industry according to the nature of the products. The second chapter is devoted to the raw materials employed in the industry, and the third chapter describes the processes and appliances used in the fusion or melting of the raw materials. Succeeding chapters contain a description of the methods used in the working of the molten material into the various shapes, and also a description of the various products, their application, and their commercial classification. The sixth chapter is devoted to the economic condition of the industry, presenting, in tabular form, statistics of the various establishments, their personnel, power, and machinery employed, consumption of raw materials, quantity and value of products, and imports and exports.

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[a] Bulletin No. 65, pp. 323, 324; Bulletin No. 72, p. 597.

INDIA-RUBBER AND ASBESTOS INDUSTRIES.—The first part is devoted to the india-rubber industry. Chapter one classifies the plants from which crude rubber is obtained, and describes the extraction of the latex, its coagulation, and its preparation for market, as well as the appliances used in such work. Information is also given concerning the production, commerce, commercial grades, and prices of the crude product. Chapter two describes the various materials employed in the manufacture of india rubber and of articles in which india rubber is combined with other materials. Chapter three is devoted to the technical processes used in manufacturing the finished product, and chapter four classifies and describes the various articles wholly or partially composed of india rubber. Chapter five contains a report on the economic position of the industry, a history of the industry, and statistical facts concerning the number of establishments engaged, the total production, and imports and exports of the manufactured product.

The second part relates to the asbestos industry. It gives information on the composition, properties, and commercial value of crude asbestos, the manufacturing processes employed, the varieties, prices, and uses of the manufactured product, and the economic situation of the industry.

CONSTRUCTION OF MACHINERY AND ELECTRICAL APPARATUS.—This monograph consists of five chapters: The first chapter classifies and defines the various forms of electrical appliances, while the second chapter describes the materials entering into the composition of these appliances. Chapter three gives a descriptive summary of the electrical industries; and chapter four describes the manufactured products, including dynamos, motors, locomotives, rheostats, transformers, accumulators, commutators, cables, telephone and telegraph apparatus, lamps, and electrical measuring instruments, as well as articles of a miscellaneous nature. The fifth chapter presents statistics relating to the economic situation of the industry, giving the number of establishments, employees, and motive power employed in each branch of the industry; figures are also given which show imports and exports of the manufactured products.

Each of the monographs is profusely illustrated and contains a directory of the establishments engaged in the production of the articles considered.

FRANCE.

Enquête sur le Travail à Domicile dans l'Industrie de la Lingerie. Tome I. Paris. Ministère du Travail et de la Prévoyance Sociale, Office du Travail. 1907. xiv, 768 pp.

This volume gives in detailed form the results of an inquiry into the material and social conditions surrounding home work in the making of undergarments and household linen in the city of Paris.

The work is divided into five parts. An introductory chapter is devoted to an outline of the scope and plan of the inquiry, including, as well, specimens of the schedules of questions used in the conduct of the investigation.

The first part presents the individual reports of manufacturers and merchants engaged in the industry. They include, in a general way, statements of the conditions under which work is given out by each establishment, including the method and the rate of payment for the work.

The second part presents the individual reports of the working people, principally women, who contract to accept work from the larger establishments and who execute it themselves, aided, in some cases, by their families or by a few employees, the work being done in the home of the contractor. Figures showing the number of employees, hours of labor, and rate of compensation are presented where such facts could be obtained.

The detailed results of the inquiry, in tabular form, are presented in the third part, which forms the main body of the work. The product is divided into four groups, as follows: (1) Women's and children's undergarments, shirtwaists, blouses, and infants' apparel; (2) men's undergarments; (3) household linen; and (4) undergarments and linen of a miscellaneous nature made for charitable societies and institutions, for railroads, and for the army and the navy. The tables show, for each household, the number, ages, conjugal condition, and length of service of the persons employed; variety of goods made, price paid, source from which work is obtained, time of delivery of work, and time of payment; hours of labor, daily earnings, and annual income, and location, rent, and sanitary conditions. Statistics are given for a total of 510 households.

In the fourth part of the volume are presented individual monographs of the working people, with some family budgets which show the receipts and expenditures of each household.

The fifth part consists of an analysis and résumé of the results of the investigation. The report shows that 52 per cent of the working people embraced in the investigation entered the trade before the age of 26 years, and that 17 per cent were at the time of the inquiry 60 years of age or over. Half of the total number were married, a third were widowed or divorced, and the remainder were single. Two-fifths of the married women had, at the time of the inquiry, no children in their charge, and the proportion of childless widows and divorcees is a little less, about 37 per cent. Only 44 out of the total of 510 households worked for more than one establishment, and in most cases work was delivered every day of the week except Sunday. Payment was usually made once a week, at the time of the delivery of the work. In the busy season, the hours of labor for 43 per cent of the workers were fewer than 10 per day; for 43 per cent the hours of labor were from 10 to 12 per day, and for 13 per cent they were more than 12 per day. Out of a total of 217 working people whose earnings could be established half earned less than 16 centimes ($0.03) per hour and 85 per cent less than 26 centimes ($0.05) per hour. Of 366 working people reporting annual earnings, 60 per cent earned less than 400 francs ($77.20) per year, nearly 25 per cent earned from 400 to 600 francs ($77.20 to $115.80) per year, and the remainder more than 600 francs ($115.80). The annual income (including wages earned from other sources and relief given by charity) was, for 57 per cent of the unmarried working people, from 301 to 600 francs ($58.09 to $115.80); the annual income (including the earnings of the husband) of the same proportion of the married people was from 1,500 to 2,500 francs ($289.50 to $482.50) per annum. Of a little less than 500 habitations visited, 135 were of one room only. Of this number, 61 were less than 30 cubic meters (1,059 cubic feet) in size, and 24 were occupied by three or more persons. Rents usually varied from 151 to 300 francs ($29.14 to $57.90) per year. In 68 per cent of the habitations the sanitary conditions were found satisfactory; the remainder were characterized as bad.

DECISIONS OF COURTS AFFECTING LABOR.

[Except in cases of special interest, the decisions here presented are restricted to those rendered by the federal courts and the higher courts of the States and Territories. Only material portions of such decisions are reproduced, introductory and explanatory matter being given in the words of the editor. Decisions under statute law are indexed under the proper headings in the cumulative index, page 471 et seq.]

DECISIONS UNDER STATUTE LAW.

ASSIGNMENT OF WAGES—FUTURE EARNINGS—CONSTITUTIONALITY OF STATUTE—*Mutual Loan Co. v. Martell, Supreme Judicial Court of Massachusetts, 86 Northeastern Reporter, page 916.*—The company named sued to recover on two promissory notes given by two different persons (one of whom was married), secured by an assignment of future earnings in the employment of the defendant, Martell. Martell relied on sections 7 and 8 of chapter 605, Acts of 1908 (given in full on page 466), as his defense, since he had not accepted either assignment, as provided for by section 7, nor had the wife of the married employee concerned consented in writing to the assignment of her husband's earnings, as provided by section 8. The loan company contended that these sections are unconstitutional, and on judgment being given against it in the superior court of Suffolk County it appealed to the supreme court. The law was upheld by this court, as appears from the following quotations from its opinion, which was delivered by Judge Knowlton:

These sections interfere with the rights of the assignor and assignee to contract with each other, which right of contract, in general, is secured to all our citizens under the fourteenth amendment to the Constitution of the United States, as well as under the constitution of Massachusetts. Such an interference by law with one's right to manage his property and to make contracts in relation to it and to pursue any proper vocation is in violation of the constitution, unless it can be justified upon an independent ground. The defendant contends that there is such justification, in the present case, in the enactment of this statute by the legislature in the exercise of the police power.

The State may legislate for the public health, the public safety, the public morals and the public welfare, in the exercise of this power. But, in balancing this right of the State against the constitutional right of the individual to personal liberty, it is often difficult to draw the line between permissible and impermissible legislation.

In the present case we have to inquire how far the welfare of the community requires an interference by way of regulation with the right of workmen to dispose of their wages to be earned in the future.

The requirement that they [the assignments] be recorded is certainly reasonable. It tends to lessen the opportunity of wage-earners to be dishonest in procuring credit on the faith of their expected possession of earnings, as they might be if unrecorded assignments were outstanding. The requirement that the order or assignment be accepted in writing by the employer tends to diminish the risk of his refusal to pay, involving litigation the result of which might be loss of employment by the wage-earner and injury to the business of the employer. Then, too, this requirement might operate as a check upon the rapacity of unscrupulous money lenders who are inclined to take advantage of the needs of employees. If the legislature saw an advantage to the community from this provision, we can not say that they were acting beyond their constitutional authority in enacting the law.

Nor can we say that they might not find grounds for a distinction between assignments to secure loans of money and assignments as security for necessaries or other property furnished or to be furnished. The occasions for making assignments as security for necessaries may be far more pressing than for making them to obtain money, and the risk of wasting that which is obtained may be much less in one case than in the other. The statute is not unconstitutional because it deals only with security for loans and does not include security for other debts.

Section 8 presents a similar but more difficult question. A married man is bound by law to support his wife. If he is a wage-earner, although she has no legal title to his wages, she has an interest in the right use of them. If there are such risks of his making an improper disposition of them by assigning them to secure the payment of money that he borrows for unnecessary purposes as to justify the legislature n limiting and regulating his exercise of this right, might they not regulate it by requiring the consent of his wife as a prerequisite to the validity of his assignment? A strong argument can be made in favor of the plaintiff's contention on this point. But on the whole we are of opinion that the legislature might look chiefly to the ordinary relations between husband and wife under the law, and adopt this form of regulation as salutary in its application to most members of the class with which they were dealing. The principles that are applicable to section 7 require us to hold section 8 to be constitutional.

CONSPIRACY—COMMON LAW—EFFECT OF STATUTES—ELEMENTS OF OFFENSE—INTERFERENCE WITH EMPLOYMENT—FINES OF EMPLOYERS—EXTORTION—RECOVERY—*State v. Dalton, St. Louis (Missouri) Court of Appeals, 114 Southwestern Reporter, page 1132.*—Charles J. Dalton and Franklin C. Fay were indicted for conspiring to unlawfully extort from William Burke, a contracting plumber, the sum of $200 by inducing the employees of said Burke to cease work and to refrain from working for him until such sum should be paid.

The indictment was quashed in the St. Louis court of criminal correction and the defendants dismissed, whereupon the State appealed and secured a reversal of the judgment of the court below, on grounds that appear in the portion of the opinion quoted below.

The State has a statute on the subject of conspiracy, and the trial court had proceeded on the ground that it entirely superseded the common law on the subject, so that no case could be brought except as it fell within its provisions. Since this statute did not cover the offenses named in the indictment, it was held that no crime had been committed. This view the appellate court rejected, holding that the statute did not repeal the common law, and that action would still lie under the latter. Having disposed of this point, the court took up the definition of the term "conspiracy," as construed by the courts and by the grand jury in the indictment under consideration.

Judge Nortoni, who delivered the opinion, said:

It is indeed difficult to formulate an accurate definition of conspiracy at common law which will incorporate all of the acts punishable under this description, without including as well acts which may not be punishable. Therefore, in Com. *v.* Hunt, 4 Metc. (Mass.) 111, 123, 38 Am. Dec. 346, Chief Justice Shaw said: "Without attempting to review and reconcile all the cases, we are of opinion that as a general description, though perhaps not a precise and accurate definition, a conspiracy must be a combination of two or more persons, by some concerted action, to accomplish some criminal or unlawful purpose, or to accomplish some purpose, not in itself criminal or unlawful, by criminal or unlawful means." The gist of the offense at common law is a corrupt combination which involved an infringment of the law either in accomplishing the end contemplated or the means to be employed in attaining the end to which the confederation is directed. Therefore the offense was complete and punishable even though no act was done in furtherance of the conspiracy. From these considerations it appears, of course, that a conspiracy was a substantive offense at common law, though nothing be done in execution of it.

Aside from the present statutory provisions requiring the commission of an overt act in certain cases, acts in execution of a conspiracy are alleged in the indictment and received in evidence as tending to elucidate the intention of the parties or in aggravation of the unlawful combination only. (Com. *v.* Hunt, 4 Metc. (Mass.) 111, 125, 38 Am. Dec. 346; Com. *v.* Judd, 2 Mass. 337, 3 Am. Dec. 54; State *v.* Buchanan, 5 Har. & J. (Md.) 317, 9 Am. Dec. 534; 2 Bishop, New Crim. Law (8th ed.) sec. 203.)

From what has been said, it will appear the offense of conspiracy may arise from a corrupt confederation with an unlawful purpose in either one of two ways: The offense may be complete under the old law, first, if the confederation be to do by concert of action, either direct or remote, a criminal or unlawful act by any means, whether unlawful or not; or, second, to do an act, not in itself criminal or unlawful, by criminal or unlawful means. It will be observed that the statement of the doctrine includes either a criminal or unlawful end or the employment of criminal or unlawful means. On this statement there arises for consideration, in a more or less remote degree, the question as to what character of unlawful purpose or what character of unlawful means contemplated by the conspirators will be sufficient to infuse into the confederation the elements of criminal conspiracy.

There can be no doubt whatever on the question of conspiracy when the parties combine to violate the criminal law. Of course, in every case where the confederation is for the purpose of doing, by direct or remote concert, an act which would amount to a criminal offense if done by one of the parties, notwithstanding the confederation, the offense is complete. (State *v.* Buchanan, 5 Har. & J. (Md.) 317, 9 Am. Dec. 534; 6 Amer. & Eng. Ency. Law (2d ed.) 848, 853.) And it is said by Mr. Bishop (2 Bishop, New Crim. Law [8th ed.] sec. 178) that the term "unlawful," in this connection, "signifies neither 'indictable' nor 'criminal,' though it includes both, but it means 'contrary to law,' which may be the law of the criminal courts or of the civil."

While from an examination of the authorities it may be asserted as true that the precise limits of the rule with respect to the terms, "unlawful purpose" or "unlawful means," in cases where neither the purpose to be achieved nor the means to be employed, are actually criminal, has never been clearly defined, the authorities assert and sustain a doctrine commensurate at least with the exigencies of the case now under consideration. The doctrine referred to arises from the additional power or enhanced ability to accomplish a result which is in many cases present in the combination of several to the same end. In some degree, the principle pervades the entire law of conspiracy. It may be stated as a general proposition that, where an additional power or enhanced ability to accomplish an injurious purpose arises by virtue of the confederation and concert of action, an element of criminal conspiracy is thereby introduced which will render sufficiently criminal either the means or the purpose, otherwise merely unlawful, to sustain a conviction, although the means or the end were not such as are indictable if performed by a single individual. (Com. *v.* Waterman, 122 Mass. 57; Com. *v.* Judd, 2 Mass. 329, 337, 3 Am. Dec. 54; State *v.* Burnham, 15 N. H. 396; 2 Bishop, New Crim. Law (8th ed.) secs. 180, 195; 3 Chitty, Crim. Law, 1139; 6 Amer. & Eng. Ency. Law (2d ed.) 851; Twitchell *v.* Commonwealth, 9 Pa. 211, and remarks, 212.)

There can be no doubt that the facts alleged in either count of the indictment present a case falling within the influence of the principle last stated. The indictment in the first count charges in substance that the defendant conspired to, and, in execution of the conspiracy, induced, certain mechanics to quit the employ of William Burke, and would not permit them to enter again in his employ, although he was in sore need of their services, until Burke had first paid to the defendants $200 to withdraw their influence in that behalf, and that their purpose was to thus unlawfully exact $200 from Burke, which he paid. The second count charges in substance that the mechanics mentioned voluntarily quit the employ of Burke, and that defendants corruptly conspired to and did so influence them as to prevent their return to his employ, although he was in great need of their services, unless Burke paid the defendants $200 to withdraw their influence, and that their purpose was to thus unlawfully exact $200 from Burke; which payment he made, etc. From all that appears in the indictment, the means employed by the defendants were entirely lawful. It is certainly true that if the parties are not under contract (nothing appearing to the contrary, the presumption is they were not) their associates and friends may counsel and advise them either to quit or continue a particular service, or having quit the service, as in the second count mentioned, not to return thereto except upon reasonable and proper conditions. (Thomas *v.* C. N. O. & T. Ry. Co. (In re Phelan [C. C.]) 62 Fed. 803, 817, 818; Wabash Ry. Co. *v.* Hannahan (C. C.) 121 Fed. 563 [Bulletin No. 49, p. 1374].) It is otherwise, however, with respect to the alleged purpose sought to be effectuated in either count of the indictment. It is the policy of our enlightened system of jurisprudence to insure and protect the freedom of contract in its largest measure, subject only to certain restraints imposed by a wise public policy of a still higher and more holy nature. To leave men free to choose their own occupation and contract with whomsoever they will in their particular field of industry, without restraint or interference from others, tends not only to elevate their condition by fostering a spirit of independence and ambition, but secures as well to skill and industry a proper recompense in recurring advantages, too numerous to mention. The common law has never tolerated a species of interference by third persons for a purpose such as that disclosed in the allegations of the indictment. Although one may lawfully induce another to quit a particular service, or not return to the employ of a particular person, there can be no doubt, even when no contract of employment is breached thereby, that it is unlawful for third parties, as charged in the first count, to interfere and induce employees to quit their employer, and not to return to his services, for the purpose of exacting and extorting from him a sum of money against his consent. And it is equally clear where men are unemployed, as were the mechanics mentioned in the second count to have quit the service, that it is unlawful for a third person to interfere with the freedom of contract and, by persuasion or other means, for the sole purpose of exacting or extorting a sum of money from the employer against his consent, prevent the consummation of a new contract of employment. When one, upon whom there rests no legal obligation to do so, is thus coerced, by threat, reasonable apprehension, or fear of suffering injury to his business, to contribute his means to another who has no moral or legal right to insist upon such payment, the most elementary principles of natural justice, inherent in the common law, denounce the act as unlawful and afford a remedy certain and sure. (Carew *v.* Rutherford, 106 Mass. 1, 13, 14, 8 Am. Rep. 287; March *v.* Bricklayers', etc., Union, 79 Conn. 7, 63 Atl. 291 [Bulletin No. 67, p. 887].) Although the act of procuring money from another under the circumstances stated may not be a criminal offense either at common law or under the statute, it is palpably unlawful, and an action in tort will lie in favor of the injured party for its recovery, as is affirmed in the authorities supra. This being true, the purpose of the conspiracy is obviously unlawful in the sense essential to infuse an element of criminal liability therein, as contemplated by the entire doctrine of our law in respect of conspiracy and conspirators. A single individual, acting alone to the same end, would indeed be less bold and more likely to recede from a sense of insecurity in his venture. And then, too, the ability of one person to coerce the subject of his design would be less potent. The additional power and enhanced ability arising from a confederation of two persons to overawe and coerce an ordinary man to part with his means against his will, under the circumstances alleged in the indictment, is obvious. Therefore we conclude that, although the purpose sought to be effectuated and to which the conspiracy was directed may not, in and of itself, amount to an offense against the criminal laws if committed by a single individual, it is an unlawful purpose possessed of an element essential to a criminal conspiracy in such cases—this for the reason of the additional power and enhanced ability to accomplish the contemplated mischief, which accrued in virtue of the federation.

The indictment alleges in each count that the purpose of the conspiracy was actually accomplished, and sets out sufficient facts from which an overt act, essential in the law as modified by our statute, appears. This being true, it charges an offense at common law as modified by our statute touching the commission of some overt act in case of conspiracies other than those to commit a felony upon the person of another, or to commit arson or burglary.

Employers' Liability—Railroad Companies—Acceptance of Relief Benefits—Waiver—Effect of Statute—*Goldenstein v. Baltimore and Ohio Railroad Company, Supreme Court of the District of Columbia, 37 Washington Law Reporter, page 2.*—F. E. Goldenstein sued the railroad company to recover damages for injuries received by him while in its employment within the District of Columbia. The company offered as defense that Goldenstein was a member of its relief department and had received benefits therefrom on account of his injuries and was therefore precluded from claiming other damages. The plaintiff relied on section 3 of the federal employers' liability act of 1906, which provides that "no contract of employment, insurance, relief benefit, or indemnity for injury or death entered into by or on behalf of any employee, nor the acceptance of any such insurance, relief benefit, or indemnity by the person entitled thereto, shall constitute any bar or defense to any action brought to recover damages for personal injuries to or death of such employee: *Provided, however,* That upon the trial of such action against any common carrier the defendant may set off therein any sum it has contributed toward any such insurance, relief benefit, or indemnity that may have been paid to the injured employee, or, in case of his death, to his personal representative."

This law was declared unconstitutional by the Supreme Court in certain interstate cases (207 U. S. 463; Bulletin No. 74, p. 216), but was held by the court of appeals of the District of Columbia to be valid law in said District. (Hyde *v.* R. Co., 36 Wash. Law Rep. 374, Bulletin No. 78, p. 582.) The particular point in question had not been previously discussed, but its constitutionality was upheld in the present case, as appears from the following portions of the opinion of the court, which was delivered by Judge Stafford:

The demurrer to this plea raises the question whether Congress could, constitutionally and without interfering with due freedom of contract, enact that men should not be bound by their contracts of this character. To answer yes is to say that an employee who, as such, has suffered an injury through the fault of his employer, and who thereafter accepts a consideration in settlement and discharge of his damage, is not bound by said acceptance nor by his deed expressly releasing and discharging his claim, provided such acceptance and release were under and in pursuance of a contract entered into by him before the injuries were suffered which entitled him to receive that consideration. The act does not attempt to touch contracts of settlement made for the first time after the injuries were received and not under any prior arrangement of this character, but only those contracts under which the employee was acting during the course of his employment. His prior agreement to accept such benefits, if he accepts them at all, in full of his claim for damages, is impliedly declared to be unjust, oppressive, and against public policy, and the benefits actually received by him in pursuance of this agreement are referred back to such unlawful contract and are declared to be payment pro tanto only. The theory of the statute seems to be that during the period when the relation of employer and employee exists or is in contemplation, the parties do not stand on a level, but that the employee or person applying for employment is subject to the undue influence of the employer, as the borrower is supposed to be under the like power of the lender in the matter of interest. To continue the analogy, the employee, on entering into the contract to accept benefits in full if he accepts them at all, is in the position of the borrower when agreeing to pay usury, while the employee when accepting the benefits after injury is in the position of the borrower when actually paying the usury. As the borrower may still recover back the usurious payment, so may the employee repudiate his release of his real damages. If it be said that the injured employee is at liberty to accept or reject the benefits as he may choose, so, it may be replied, is the borrower at liberty to pay or refuse to pay the usurious rate. In the case of interest on money the legislature has said that the liberty is only theoretical, not real; in the case of the employees of common carriers Congress has said the same.

Was Congress justified in treating this class of men—employees of common carriers—as a class needing peculiar protection? That is—is it not?—a question for legislative judgment, rather than forensic. As the courts have sustained the usury laws and others of like character, why should they not sustain this? They should, certainly, unless it is too plain for argument or doubt that there is no rational ground for classifying such employees in this way, no reasonable basis in point of fact for saying that they are subject to be taken advantage of unconscionably by the other party to the contract. How can the courts possibly take such a position as that? How can we shut our eyes to the facts that the men who make up the largest part of the railroad's working force are poor men, taking their lives in their hands every day, and supporting their wives and children by the day's earnings and that in many instances the loss of the job is the loss of comfort, of health; perhaps of life itself to the laborer or those who depend upon him? Had not Congress a right to say—to let railroads exact from their employees a binding agreement that they shall be required to pay for the loss of an arm only so much, for the loss of an eye so much and no more, for the loss of a life not exceeding so much—in each instance a less sum perhaps than would be recoverable in any impartial court—is against public policy and a rule which will tend to make railroads careless of life and limb? Might they not fairly say that public policy requires that the burden of this great annual sacrifice of health and strength and happiness and life should fall where it ought to fall as between the laborer and the employer—i. e. where it turns out on full and fair inquiry that it ought to fall—rather than that a poor and overworked class should be permitted to barter away its rights in advance as the mere price of an opportunity to work? These are considerations that address themselves to legislatures and when they are found weighty and controlling by that branch of the government it is of doubtful propriety for the judicial branch to seek to overturn its work.

The supreme court of Indiana, in the case of International Text Book Co. *v.* Weissinger, 160 Ind. 349, 65 N. E. 521, 98 Am. St. Rep. 334, had occasion to pass upon the constitutionality of a state statute prohibiting assignments of future wages to become due to employees, and sustained the constitutionality of the act. After referring to many acts of legislation in that State showing a tender regard for the rights of wage-earners the court turns to the reasons underlying such legislation, calling attention to the large number of wage-earners employed in manufacturing and mining industries and the heavy sum paid annually to this class. They then take notice of the fact that a large proportion of the persons affected by such statutes are dependent upon their daily or weekly wages for the maintenance of themselves and families; that delay of payment may result in the deprivation of the necessaries of life, suffering, inability to meet obligations and in many cases may make wage-earners a charge upon the public. They go on to say: "The situation of these persons renders them peculiarly liable to imposition and injustice. * * * Where future wages may be assigned, the temptation to anticipate their payment and to sacrifice them for an inadequate consideration is often very great. * * * It is clear that the object of the act was the protection of wage-earners from oppression, extortion or fraud on the part of others and from the consequences of their own weakness, folly or improvidence. We can not say that no just ground existed for such legislative interference for so commendable a purpose." The analogy is then pointed out between the disability imposed by that act and the disability which renders married women incompetent to bind themselves or their property by contracts of suretyship; the disability of the debtor before judgment to waive the benefit of exemption laws and laws providing for a stay of execution or regulating the rights of parties under mortgages on household goods.

Contracts of indemnity, insurance and of relief benefits such as those legislated against in the act now under consideration are an attempt on the part of employers to restrict their common law liability by requiring their employees to accept and receive for injuries a sum less than that to which they would otherwise be entitled. It is as if an employer should say to an employee, "I will not accept you in my service unless you will agree beforehand that if you are injured, instead of being compensated in full you shall receive therefor only some small amount now inserted in the contract." The supposition is that the employee assents to the contract under the stress of his situation by reason of his necessity to secure employment. Is it not legitimate for the legislature to say that such contracts are against public policy? When the State of Missouri enacted a statute providing that in all suits brought upon policies of fire insurance the company should not be permitted to deny that the property insured was worth the full amount of the insurance at the time of issuing the policy, although the policy itself provided that the company should not be liable beyond the actual value of the property at the time of its loss, the Supreme Court of the United States held the statute to be constitutional, notwithstanding the limitation placed thereby upon the right of contract. (Orient Insurance Co. *v.* Baggs, 172 U. S. 557.) In another case the same court declared that the right to contract is not absolute in respect to every matter, but may be subjected to the restraints demanded by the safety and welfare of the State and its inhabitants, and that the right to impose these restraints was not confined to the right of the legislature to amend the charters of corporations. (Knoxville Iron Co. *v.* Harbison, 183 U. S. at page 224.) In the case last cited the court had before it an act of the Tennessee legislature requiring that store orders and all like evidences of indebtedness issued by employers in payment of wages should be redeemed in cash by such employers at the option of the holders and held that the statute was not an unconstitutional impairment of the freedom of contract. In Holden *v.* Hardy, 169 U. S. 166, the same court upheld an act of the State of Utah limiting to eight hours per day the employment of workingmen in mines underground.

The defense attempted to be pleaded in the second plea in this case would be a good defense except for the statute, according to the decisions in various States. (People *v.* Powers (Ohio), 35 L. R. A. 507; Donald *v.* Railroad Co. (Iowa), 33 L. R. A. 492; Railroad Co. *v.* Curtis, 51 Neb. 442, 66 Am. St. Rep. 456; Ringle *v.* Railroad Co., 164 Pa. St. 529, 44 Am. St. Rep. 628; Owens *v.* Railroad Co. (U. S. Cir. Ct., Sou. Dist., Ohio), 1 L. R. A. 75.) That is the exact point decided for this jurisdiction in Brown against this same defendant. (6 App. D. C., 237, 23 Wash. Law Rep. 337.) In that case the court took note of the distinction between those cases in which there was only a precontract to accept benefits and release the railroad company and those in which there was an actual acceptance of the benefits and a release in consideration thereof subsequent to the injury. In the former cases it was said that there might not be a discharge of the defendants, although that question was not decided, but in the latter cases it was held that the discharge was effective. While no doubt is intended to be cast upon this decision it is pertinent to observe that there are other cases in other jurisdictions which hold that even without the statute the defense here set up in the second plea is insufficient as based upon a contract against public policy; for the reasons which have induced some courts to so hold without a statute may well be considered as affording a sufficient basis for a statute when the legislature has chosen to enact one.

In the case of Chicago, etc., Railroad Co. *v.* Miller, 76 Fed. Rep. 439, the defendant put its reliance upon just such a contract with its employees as that which has been pleaded in this case, and it was there decided that the plaintiff's right of action against the company was not barred by the acceptance of such benefits. The same question was afterwards argued before the court of appeals in the same case and the decision affirmed, Caldwell, Judge, saying: "Such contracts so far as they attempt to release the railroad company from liability for injuries inflicted on its employees through its negligence are without sufficient consideration against public policy and void, and must ultimately be so declared by all courts." (22 C. C. A. 264; see also 9 Cyc. 544.)

On the other hand two cases reported in 71 Fed. Rep., one at page 139 and the other at page 931, hold such agreements to be valid, and the latter treats the statute of Ohio, which expressly declared such agreements illegal, to be unconstitutional. Such decisions are apparently open to the pointed criticism of legal writers, such as that to be found in 31 Am. Law Rev. 460. To quote therefrom: "Where a man ships goods over a railroad and accepts from the railroad company a bill of lading in which the company endeavors to exonerate itself from the consequences of its own negligence, the clause by which the company attempts to exonerate itself is void; but where a railroad company assumes the bailment of human lives and is negligent in taking proper care of them—and no matter how gross its negligence may be—it may contract that if it provides a hospital, kept up chiefly by the very men whose lives are in its charge, it may kill and maim them with impunity." The statement may sound sardonic, but it is feared there is too much justice in it. One is reminded of an occasion when by a still higher authority than any of those here cited the question was asked, "What man shall there be among you, that shall have one sheep, and if it fall into a pit on the Sabbath day, will he not lay hold of it and lift it out? How much then is a man better than a sheep?" (The Gospel according to St. Matthew, chapter 12, verses 11 and 12.) A court which pays greater heed to the safety of the live freight of the cattle train than to the human beings who managed the train would seem to deserve a similar rebuke. In Kilpatrick *v.* Grand Trunk R. R. Co., 74 Vt. 288, 63 L. R. A. 551, 93 Am. St. Rep. 887, the supreme court of Vermont had under consideration a statute prohibiting the use of side ladders on freight cars, and making a company using such ladders subject to a penalty and also liable for injuries occasioned thereby. After the fullest consideration it was there held that the doctrine of assumption of risk, viewed as a contract, could not be invoked by a railroad company against its employee who sued it for injuries resulting from the use of such ladder, because such a contract would be against public policy, and that the enactment of such a statute was a valid exercise of the police power for the protection of the poor and helpless, although it prevented the employee from assuming the risk by contract. It would not be becoming for the writer of the present opinion to quote from the language of the opinion in that case, but he wishes to reiterate his belief in the soundness of the views there expressed. See also the note to Houston, &c., R. R. Co. *v.* De Walt, 97 Am. St. Rep. at pages 890–893, where this case and others are discussed. The Vermont case just referred to is in line with the decision in the well-known case of Narramore *v.* Cleveland, &c., R. R. Co., 96 Fed. Rep. 298, 37 C. C. A. 499, where the opinion was delivered by Circuit Judge Taft.

If it is objected that the present act is unconstitutional as being limited to a particular class of employees instead of applying to all classes, it would seem to be a sufficient answer that so far as the courts

> are aware, it is only employees of common carriers who are liable to be made the victims of unjust contracts of this peculiar character. The court has no reason to suppose that Congress would not just as readily extend the act to other employees if there were any such abuse to be corrected in respect to them. It is peculiarly the province of the legislature to ascertain the bases of facts upon which legislation is required.
>
> For the foregoing reasons it is considered that the second plea is bad, as it relies upon matters which the act of Congress expressly and constitutionally declares shall not constitute a bar.

EMPLOYERS' LIABILITY—"RAILROAD HAZARDS"—CONSTRUCTION OF STATUTE—*American Car and Foundry Co. v. Inzer, Appellate Court of Indiana, 86 Northeastern Reporter, page 444.*—This was an action by Mary Inzer as administratrix to recover damages for the death of John A. Inzer, alleged to have been caused by the company's negligence. The company builds cars, and Inzer was a tinner employed in roofing a car when the car on which he was working was moved in a train of six cars drawn by a locomotive of a railway connected with the company's plant. Being knocked from the car he was pinioned under a wheel and afterwards run over and killed by the negligence of those in charge. This was the finding of the circuit court of Clark County, and it was affirmed by the appellate court. The matter of interest in the case was the application to the accident of the employers' liability act of the State (Burns's Ann. Stat. 1901, sec. 7083), which had been restricted in its application by the decision in case of Bedford Quarries Co. *v.* Bough, 168 Ind. 671, 80 N. E. 529; see Bulletin No. 71, page 377. A part of the reasoning of the court on this point is given, in the language of Judge Roby, who spoke for the court:

> That case decides the act is violative of the fourteenth amendment of the federal Constitution, in so far as it imposes upon corporate employers burdens which are not imposed upon individual employers. The act as applied to railroads is upheld, but the case does not decide that only railroads as such are within the purview of the act, but that the legislature intended it to apply to "railroad hazards." The character of the employment must be the test by which to determine its applicability, and not the character of the employer. (Kline *v.* Minn. Iron Co., 93 Minn. 63, 100 N. W. 681; Bedford Quarries Co. *v.* Bough, supra.) Analogous statutes of other States applying to "railroads," have been upheld because their manifest purpose was to give their benefits to employes engaged in the hazardous business of operating railroads. (Akeson *v.* Ch. etc., R. Co., 106 Iowa 54, 75 N. W. 676; Mo. Pac. R. Co. *v.* Haley, Adm'r, 25 Kan. 53.) A consideration of the reasoning of the foregoing cases shows that the appellee was within the statute. Clearly it was a railroad hazard which caused the death. The complaint was therefore sufficient, and the demurrer to it was correctly overruled.

EMPLOYMENT OF CHILDREN—NEWSPAPERS AS MERCHANDISE—CONSTITUTIONALITY OF STATUTE—*District of Columbia v. Reider, Juvenile Court of the District of Columbia (Opinion copied from court files).*—Lynn L. Reider, a route agent for a morning newspaper in the District of Columbia, was charged with a violation of the child-labor law of the District in employing a minor under 14 years of age to deliver newspapers. The first section of the law reads in part as follows:

> No child under fourteen years of age shall be employed or permitted to work in the District of Columbia * * * in the distribution or transmission of merchandise or messages. No such child shall be employed in any work performed for wages or other compensation, to whomsoever payable, during the hours when the public schools of the District of Columbia are in session, nor before the hour of six o'clock in the morning or after the hour of seven o'clock in the evening: *Provided*, That the provisions of this section shall not apply to children employed in the service of the Senate.

There was no question as to the facts, the defendant claiming, first, that the act is void on the ground that it is in conflict with the fourteenth amendment of the Constitution, requiring all legislation to be uniform in its application, and, in any case, that the delivery of newspapers is not prohibited by the act. The first contention was denied, but the second was allowed and Reider was discharged on the single ground that newspapers are not merchandise. The District sought to procure a writ of error to bring the case before the court of appeals of the District of Columbia, but this court refused to grant the writ, sustaining the decision of the juvenile court.

The opinion of the juvenile court was delivered by Judge De Lacey, and is as follows:

> Counsel for the defendant contend that the act is unconstitutional because it excludes children in the employ of the U. S. Senate. But everybody knows that children in the employ of the Senate are not properly a "class," for the constituent units of such alleged class are subject to constant change owing to the political favor upon which such service depends, so that, theoretically at least, it is possible for every child in the District to enjoy such excepted employment. Without such exception, it is doubtful that service in the Senate would have come within the employments prohibited, any more than the making of beds or the nursing of children, and, while it may be well to have such exception expressed, its exemption is no more fatal to the act than the nonenumeration of the many other activities open to children which the law making power has not seen fit to prohibit. The Supreme Court of the U. S. has said that "legislation which, in carrying out a public purpose, is limited in its application, if within the sphere of its operation it affects alike all persons similarly situated, is not within the [fourteenth] amendment." (Barbier *v.* Connolly, 113 U. S., 27.) Counsel also objects, on constitutional grounds to section 16, giving the commissioners authority to issue permits for the employment of children in theatrical exhibitions, citing the case of Yick Wo

v. Hopkins, 118 U. S., 356. But this legislation has reference to infants whose status under the law is abnormal, and is intended for their protection, and plainly confers upon the commissioners a discretion to be exercised according to the circumstances of each case, and, therefore, is excepted from the operation of this ruling of the Supreme Court by the very language of the decision, for "the character of the exhibition" is specified.

This act is undoubtedly a valid exercise of the police powers of the State, for the protection of child life.

This brings us to the question as to whether the delivery of newspapers as set forth be prohibited.

Counsel on both sides have industriously and skillfully labored to enlighten the court as to the meaning of the word "merchandise," the prosecution insisting that even old newspapers have value for junk dealers and for this reason and because of the decision in the case of Smith *v.* Wilcox, 24 N. Y. Reports, 353, that newspapers are merchandise, their delivery is forbidden by section 1 of this act. But it must be remembered that old newspapers cease to be sought for as newspapers, disseminators of the news from the four quarters of the globe, and are valuable for the paper stock in them.

In Smith *v.* Wilcox decided in 1862, a liberal construction was given to an act for the regulation of the observance of the Sabbath. In view of the language of the decision that "acts not interfering with the benevolent design of the Sabbath * * * and not prohibited, do not take their character from the day on which they are done, but are lawful or unlawful in reference to the general laws of the land," and the wonderful development of the Sunday newspaper, this decision can hardly be given much weight in the interpretation of an act of the character of the one now under consideration. I do not think that newspapers are merchandise in the proper sense of that term for the reason

First, everything of value is not merchandise, for instance, land;

Second, everything trafficked in is not merchandise, e. g., stocks and bonds;

Third, newspapers are sought for the intelligence they transmit, and not for the intrinsic value of the material upon which that intelligence is conveyed.

But whether newspapers be merchandise or not, it is a familiar rule of interpretation that an act to be within a penal prohibition must be within its spirit as well as within its letter. Whatever is not within the motives and purposes of an act, although within the letter of the act, is without its operation. Now the purpose of this legislation is the protection of the physical and mental welfare of children in their growing years from whatever may lead to arrested development. No one will seriously contend that the nature of the employment in the case at bar is at all harmful to the child, nor can it be urged that Congress had in mind newspapers in the enumeration of "merchandise" in section 1, since in section 11 et seq. it promulgated its wishes in regard to the handling of newspapers by minors. In no place in the act is the prohibition of the delivery of newspapers to be found, and it follows that the defendant is discharged.

Employment of Labor—Breach of Contract by Employee—Recovery of Wages Earned—*Latham v. Barwick, Supreme Court of Arkansas, 113 Southwestern Reporter, page 646.*—J. F. Barwick had recovered wages in a suit against one Latham, executor of an estate, in the circuit court of Clay County, whereupon the latter appealed, securing a reversal of the judgment of the lower court. The facts appear in the opinion, which was delivered by Judge McCulloch, and is in part as follows:

This is an action instituted by appellee against appellant's testatrix to recover upon an account for wages alleged to be due him as a farm hand. He entered into a verbal contract with appellant's testatrix to work on the latter's farm from February 26 until July 1, 1906, for $25 per month, and quit work on May 14, 1906. He sues for the amount of his earned wages. There was testimony tending to show that according to the terms of the contract the wages of appellee were to be paid one-half as he earned or needed them and the other half on July 1st, that he quit the service of his employer without cause, and that at the time he quit work more than one-half of his earned wages had been paid to him.

There seems to be some conflict in the authorities whether or not one employed for a specified time, who, without adequate cause, quits service before expiration of the time, can recover upon a quantum meruit; but the great weight of authority is to the effect that he can not recover. (26 Cyc. p. 1042, and cases cited.) This court adopted the rule sustained by the weight of authority. English, C. J., speaking for the court in Hibbard *v.* Kirby, 38 Ark. 105, said: "The rule seems to be that if the contract of the servant to labor be for a specified period of time, and payment is to be made, either expressly or by implication of law, at the end of the period, and the servant leaves the service of his master improperly, without a sufficient cause, and without his consent, before the expiration of that time, he can recover no compensation for his services, either on the contract or on a quantum meruit." A statute of this State enacted in 1883 puts the question entirely at rest. It is as follows: "If any laborer shall without good cause abandon his employer before the expiration of his contract he shall be liable to such employer for the full amount of any account he may owe him and shall forfeit to his employer all wages or share of crop due him or which may become due him from his employer." (Kirby's Digest, sec. 5028.) This statute is conclusive of the questions involved in this appeal. It applies, in express terms, to all verbal contracts for services for a period not longer than one year.

It follows that the court erred in giving a peremptory instruction and in refusing to give the instructions requested by appellant.

Reversed and remanded for a new trial.

Mine Regulations—Sale of Powder—Commerce—*Ex parte Williams, Supreme Court of Kansas, 98 Pacific Reporter, page 777.*—J. H. Williams was convicted of selling powder to a coal miner in violation of the provisions of chapter 250, acts of 1907, which permit such sales only in an original package containing 12½ pounds of powder, securely sealed. In default of the fine imposed, Williams was committed to jail. He applied for a writ of habeas corpus, contending that the law was unconstitutional as restricting the liberty of contract by taking property without due process of law, by denying the equal protection of the laws, and by unlawful discrimination. It was also claimed that the law was void, because it conflicts with the commerce clause of the Constitution of the United States.

It was stipulated that the powder sold was in an unbroken original package containing 25 pounds and was imported into Kansas from the State of Missouri by the company for which Williams was agent; that black powder is an article of commerce among the States; and that black powder in 12½-pound packages can not be bought or sold in the market except at a considerably higher price. The constitutionality of the law was upheld in all its points and the prisoner was remanded. Judge Benson announced the opinion of the court, reviewing each of the claims of the defendant. He held that, owing to the hazardous nature of coal mining and the equal application of the law to all employment in such mines, the charge of discrimination was not well founded; that the regulation of the sale of dangerous explosives was a customary and valid exercise of the police power of the State, which controls even the right of contract; and, further, that the control over commerce conferred on Congress "does not prevent the State from making reasonable regulations designed primarily to promote the health and safety of its people, although they indirectly affect the subjects of interstate commerce." Cases were cited in support of each point taken, and the following syllabus was prepared by the court as presenting its rulings on the points of law involved:

Chapter 250, page 400, of Laws 1907, entitled "An act to protect mines, miners, and mine laborers, and defining the manner of sale and delivery of black powder for use in coal mines of the State of Kansas," is not in conflict with the state constitution or the fourteenth amendment to the Constitution of the United States and is not invalid as a regulation of interstate commerce.

PAYMENT OF WAGES—WEIGHING COAL BEFORE SCREENING—FREEDOM OF CONTRACT—EQUAL PROTECTION OF LAWS—CONSTITUTIONALITY OF STATUTE—*McLean v. State, Supreme Court of the United States, 29 Supreme Court Reporter, page 206.*—This was a case in which was brought in question the constitutionality of section 1 of the statute of Arkansas (ch. 219, acts of 1905), which requires operators of mines employing ten or more men underground at bushel or ton rates to weigh all coal mined before screening the same. Waiver of the statute by the employee is prohibited, and punishment for violations is fixed at a fine of not less than $200 nor more than $500, or imprisonment for not less than 60 days nor more than 6 months, or both fine and imprisonment. McLean was managing agent of a mining company and contracted with his employees to pay them at a fixed rate per ton, the coal to be screened before weighing. For this admitted violation of the law he was convicted in the circuit court of Sebastian County and, on appeal, in the supreme court of the State, over his contention that the law was unconstitutional. Further appeal was taken to the Supreme Court of the United States, in which the constitutionality of the law was upheld, Justices Brewer and Peckham dissenting. Owing to the importance of the principle involved, the opinion of the court, which was delivered by Justice Day, is reproduced in full:

> The objections to the judgment of the state supreme court of a constitutional nature are twofold: First, that the statute is an unwarranted invasion of the liberty of contract secured by the 14th amendment of the Constitution of the United States; second, that the law, being applicable only to mines where more than ten men are employed, is discriminatory, and deprives the plaintiff in error of the equal protection of the laws, within the inhibition of the same amendment.
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> That the Constitution of the United States, in the 14th amendment thereof, protects the right to make contracts for the sale of labor, and the right to carry on trade or business, against hostile state legislation, has been affirmed in decisions of this court, and we have no disposition to question those cases in which the right has been upheld and maintained against such legislation. (Allgeyer *v.* Louisiana, 165 U. S. 578, 17 Sup. Ct. Rep. 427; Adair *v.* United States, 208 U. S. 161, 28 Sup. Ct. Rep. 277.) But, in many cases in this court, the right of freedom of contract has been held not to be unlimited in its nature, and when the right to contract or carry on business conflicts with laws declaring the public policy of the State, enacted for the protection of the public health, safety, or welfare, the same may be valid, notwithstanding they have the effect to curtail or limit the freedom of contract. It would extend this opinion beyond reasonable limits to make reference to all the cases in this court in which qualifications of the right of freedom of contract have been applied and enforced. Some of them are collected in Holden *v.* Hardy, 169 U. S. 366, 18 Sup. Ct. Rep. 383, in which it was held that the hours of work in mines might be limited.
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> In Knoxville Iron Co. *v.* Harbison, 183 U. S. 13, 22 Sup. Ct. Rep. 1, it was held that an act of the legislature of Tennessee, requiring the redemption in cash of store orders or other evidences of indebtedness issued by employers in payment of wages due to employees, did not conflict with any provisions of the Constitution of the United States, protecting the right of contract.
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> In Frisbie *v.* United States, 157 U. S. 160, 15 Sup. Ct. Rep. 586, the act of Congress prohibiting attorneys from contracting for a larger fee than $10 for prosecuting pension claims was held to be a valid exercise of police power.
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> In Soon Hing *v.* Crowley, 113 U. S. 703, 5 Sup. Ct. Rep. 730, a statute of California, making it unlawful for employees to work in laundries between the hours of 10 p. m. and 6 a. m. was sustained.
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> The statute fixing maximum charges for the storage of grain, and prohibiting contracts for larger amounts, was held valid. (Munn *v.* Illinois, 94 U. S. 113.)

In Patterson *v.* The Eudora, 190 U. S. 169, 23 Sup. Ct. Rep. 821, this court held that an act of Congress making it a misdemeanor for a shipmaster to pay a sailor any part of his wages in advance was held to be valid.

In Gundling *v.* Chicago, 177 U. S. 183, 20 Sup. Ct. Rep. 633, this court summarized the doctrine as follows:

"Regulations respecting the pursuit of a lawful trade or business are of very frequent occurrence in the various cities of the country, and what such regulations shall be and to what particular trade, business, or occupation they shall apply, are questions for the State to determine, and their determination comes within the proper exercise of the police power by the State; and, unless the regulations are so utterly unreasonable and extravagant in their nature and purpose that the property and personal rights of the citizen are unnecessarily, and in a manner wholly arbitrary, interfered with or destroyed without due process of law, they do not extend beyond the power of the State to pass, and they form no subject for federal interference."

In Jacobson *v.* Massachusetts, 197 U. S. 11, 25 Sup. Ct. Rep. 358, this court said:

"The liberty secured by the Constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times, and in all circumstances, wholly freed from restraint. There are manifold restraints to which every person is necessarily subject for the common good."

It is, then, the established doctrine of this court that the liberty of contract is not universal, and is subject to restrictions passed by the legislative branch of the government in the exercise of its power to protect the safety, health, and welfare of the people.

It is also true that the police power of the State is not unlimited, and is subject to judicial review; and, when exerted in an arbitrary or oppressive manner, such laws may be annulled as violative of rights protected by the Constitution. While the courts can set aside legislative enactments upon this ground, the principles upon which such interference is warranted are as well settled as is the right of judicial interference itself.

The legislature, being familiar with local conditions, is, primarily, the judge of the necessity of such enactments. The mere fact that a court may differ with the legislature in its views of public policy, or that judges may hold views inconsistent with the propriety of the legislation in question, affords no ground for judicial interference, unless the act in question is unmistakably and palpably in excess of legislative power. (Jacobson *v.* Massachusetts, supra; Mugler *v.* Kansas, 123 U. S. 623, 8 Sup. Ct. Rep. 273; Minnesota *v.* Barber, 136 U. S. 313, 320, 10 Sup. Ct. Rep. 862; Atkin. *v.* Kansas, 191 U. S. 207, 223, 24 Sup. Ct. Rep. 124.)

If the law in controversy has a reasonable relation to the protection of the public health, safety, or welfare, it is not to be set aside because the judiciary may be of opinion that the act will fail of its purpose, or because it is thought to be an unwise exertion of the authority vested in the legislative branch of the government.

We take it that there is no dispute about the fundamental propositions of law which we have thus far stated; the difficulties and differences of opinion arise in their application to the facts of a given case.

Is the act in question an arbitrary interference with the right of contract, and is there no reasonable ground upon which the legislature, acting within its conceded powers, could pass such a law? Looking to the law itself, we find its curtailment of the right of free contract to consist in the requirement that the coal mined shall not be passed over any screen where the miner is employed at quantity rates, whereby any part of the value thereof is taken from it before the same shall have been weighed and credited to the employee sending the same to the surface; and the coal is required to be accounted for according to the legal rate of weights, as fixed by the law of Arkansas, and contracts contrary to this provision are invalid. This law does not prevent the operator from screening the coal before it is sent to market; it does not prevent a contract for mining coal by the day, week, or month; it does not prevent the operator from rejecting coal improperly or negligently mined, and shown to be unduly mingled with dirt or refuse. The objection upon the ground of interference with the right of contract rests upon the inhibition of contracts which prevent the miner employed at quantity rates from contracting for wages upon the basis of screened coal instead of the weight of the coal as originally produced in the mine.

If there existed a condition of affairs concerning which the legislature of the State, exercising its conceded right to enact laws for the protection of the health, safety, or welfare of the people, might pass the law, it must be sustained; if such action was arbitrary interference with the right to contract or carry on business, and having no just relation to the protection of the public within the scope of legislative power, the act must fail.

While such laws have not been uniformly sustained when brought before the state courts, the legislatures of a number of the States have deemed them necessary in the public interests. Such laws have been passed in Illinois, West Virginia, Colorado, and perhaps in other States. In Illinois they have been condemned as unconstitutional. (Ramsey *v.* People, 142 Ill. 380, 32 N. E. 364.) The same conclusion has been reached in Colorado, citing and following the Illinois case. (Re House Bill No. 203, 21 Colo. 27, 39 N. E. 431.)

In West Virginia, while at first sustained by a unanimous court, such an act was afterwards, upon rehearing, maintained by a divided court. (State *v.* Peel Splint Coal Co. 36 W. Va. 802, 15 S. E. 1000.)

We are not disposed to discuss these state cases. It is enough for our present purpose to say that the legislative bodies of the States referred to, in the exercise of the right of judgment conferred upon them, have deemed such laws to be necessary.

Conditions which may have led to such legislation were the subject of very full investigation by the Industrial Commission authorized by Congress by the act of June 18, 1898. (30 Stat. at L. 476, Chap. 466.) Volume 12 of the report of that commission is devoted to the subject of "Capital and Labor Employed in the Mining Industry." In that investigation, as the report shows, many witnesses were called and testified concerning the conditions of the mining industry in this country, and a number of them gave their views as to the use of screens as a means of determining the compensation to be paid operatives in coal mines. Differences of opinion were developed in the testimony. Some witnesses favored the "run of the mine" system, by which the coal is weighed and paid for in the form in which it is originally mined;

others thought the screens useful in the business, promotive of skilled mining, and that they worked no practical discrimination against the miner. A number of the witnesses expressed opinions, based upon their experience in the mining industry, that disputes concerning the introduction and use of screens had led to frequent and sometimes heated controversies between the operators and the miners. This condition was testified to have been the result, not only of the introduction of screens as a basis of paying the miners for screened coal only, but, after the screens had been introduced, differences had arisen because of the disarrangement of the parts of the screen, resulting in weakening it, or in increasing the size of the meshes through which the coal passed, thereby preventing a correct measurement of the coal as the basis of paying the miner's wages.

We are unable to say, in the light of the conditions shown in the public inquiry referred to, and in the necessity for such laws, evinced in the enactments of the legislatures of various States, that this law had no reasonable relation to the protection of a large class of laborers in the receipt of their just dues and in the promotion of the harmonious relations of capital and labor engaged in a great industry in the State.

Laws tending to prevent fraud and to require honest weights and measures in the transaction of business have frequently been sustained in the courts, although, in compelling certain modes of dealing, they interfere with the freedom of contract. Many cases are collected in Mr. Freund's book on "Police Power," wherein that author refers to laws which have been sustained, regulating the size of loaves of bread when sold in the market; requiring the sale of coal in quantities of 500 pounds or more, by weight; that milk shall be sold in wine measure, and kindred enactments. (Sec. 274.)

Upon this branch of the case it is argued for the validity of this law that its tendency is to require the miner to be honestly paid for the coal actually mined and sold. It is insisted that the miner is deprived of a portion of his just due when paid upon the basis of screened coal, because, while the price may be higher, and theoretically he may be compensated for all the coal mined in the price paid him for screened coal, that practically, owing to the manner of the operation of the screen itself, and its different operation when differently adjusted, or when out of order, the miner is deprived of payment for the coal which he has actually mined. It is not denied that the coal which passes through the screen is sold in the market. It is not for us to say whether these are actual conditions. It is sufficient to say that it was a situation brought to the attention of the legislature, concerning which it was entitled to judge and act for itself in the exercise of its lawful power to pass remedial legislation.

The law is attacked upon the further ground that it denies the equal protection of the law, in that it is applicable only to mines employing ten or more men. This question is closely analogous to one that was before this court in the case of Consolidated Coal Co. *v.* Illinois, 185 U. S. 203, 22 Sup. Ct. Rep. 616, wherein an inspection law of the State was argued to be clearly unconstitutional by reason of its limitation to mines where more than five men are employed at any one time, and in that case, as in this, it was contended that the classification was arbitrary and unreasonable,—that there was no just reason for the discrimination. Of that contention this court said (p. 207):

"This is a species of classification which the legislature is at liberty to adopt, provided it be not wholly arbitrary or unreasonable, as it was in Cotting *v.* Kansas City Stock Yards Co. (Cotting *v.* Godard) 183 U S. 79, 22 Sup. Ct. Rep. 30, in which an act defining what should constitute public stock yards, and regulating all charges connected therewith, was held to be unconstitutional, because it applied only to one particular company, and not to other companies or corporations engaged in a like business in Kansas, and thereby denied to that company the equal protection of the laws. In the case under consideration there is no attempt arbitrarily to select one mine for inspection, but only to assume that mines which are worked upon so small a scale as to require only five operatives would not be likely to need the careful inspection provided for the larger mines, where the workings were carried on upon a larger scale or at a greater depth from the surface, and where a much larger force would be necessary for their successful operation. It is quite evident that a mine which is operated by only five men could scarcely have passed the experimental stage, or that precautions necessary in the operation of coal mines of ordinary magnitude would be required in such cases. There was clearly reasonable foundation for a discrimination here."

This language is equally apposite in the present case. There is no attempt at unjust or unreasonable discrimination. The law is alike applicable to all mines in the State employing more than ten men underground. It may be presumed to practically regulate the industry when conducted on any considerable scale. We can not say that there was no reason for exempting from its provisions mines so small as to be in the experimental or formative state, and affecting but few men, and not requiring regulation in the interest of the public health, safety, or welfare. We can not hold, therefore, that this law is so palpably in violation of the constitutional rights involved as to require us, in the exercise of the right of judicial review, to reverse the judgment of the supreme court of Arkansas, which has affirmed its validity. The judgment of that court is affirmed.

DECISIONS UNDER COMMON LAW.

Contracts for Exclusive Redemption of Wage Checks—Restraint of Trade—Monopoly—Enforcement of Contract—*Stewart et al. v. Stearns & Culver Lumber Company, Supreme Court of Florida, 48 Southern Reporter, page 19.*—Stewart and another, partners, sued the company named to recover damages for the violation of a contract. Judgment being against them in the circuit court of Santa Rosa County, the partners appealed, the appeal resulting in the affirmance of the judgment of the lower court. The facts appear sufficiently in the opinion, which was delivered by Judge Whitfield, and is in part as follows:

The contract upon which the action is brought contains a lease to a partnership of a storehouse formerly used as a commissary in a village where a corporation, the owner of the storehouse, it is alleged, owned and operated a large sawmill, employing a great number of persons. The contract also contains an agreement by the corporation to relinquish its right to establish and maintain a commissary for its employees, to use its influence to induce the employees, loggers, and others to purchase their supplies from the partnership, and to issue to its employees merchandise checks against their wages directed exclusively to the partnership, to be redeemed by the corporation through the partnership for cash at par every 30 days, if such issue is not illegal. The partnership agreed in the contract to establish a general store carrying $10,000 or more of feed, grain, dry goods, boots, and shoes, furniture, drugs, stationery, notions, hardware, etc., to accept as cash the merchandise coupons issued by the corporation, and to pay the corporation every 30 days a commission of 5 per cent. upon the gross sales of the business. The partnership alleges that its covenants have been performed, and that the covenants of the corporation have been violated, for which damages are claimed.

The demurrer to the declaration presents the question whether the contract is one that the courts will enforce; i. e., whether it tends to create a monopoly, to restrain trade, or to stifle competition, so as to make it violative of the laws or of public policy of this State.

At common law any contract or agreement that in its operation has or may have a tendency to restrain trade, to stifle competition in trade, to create or maintain a monopoly, or to unnaturally control the supply of or to increase the price of or to curtail the opportunity of obtaining useful commodities, to the injury of the public or any considerable portion of the population of any locality, is regarded as contrary to just governmental principles and inimical to the public welfare, and therefore against public policy.

The courts will not in general aid either party to enforce an illegal agreement, but will leave the parties where they place themselves with reference to such illegal agreement, except where the law or public policy requires action by the courts, or where the parties are not in pari delicto, and perhaps in other cases not pertinent here.

Public policy favors competition in trade, to the end that commodities may be obtained with the greatest convenience and at the lowest possible prices, and opposes monopolies and restraints upon trade in useful commodities that tend to inconvenience or to control the supply or to higher prices, to the injury of the public or any considerable portion thereof in any locality. Agreements that in their operation and effect tend to facilitate, stimulate, or promote trade are regarded with favor where they do not directly or indirectly injure the public.

Whether a contract in its terms or operation is or may be unreasonable because it extends to or may be extended to a longer time or to a greater territory or to other subjects than is reasonably necessary for the protection of the rights of the parties inter sese, and whether the public is or may be appreciably injured thereby, can not be ascertained by any accurately defined rules, but must be determined from a practical consideration of the circumstances of every case as it arises in connection with such general principles of law and of construction as are applicable thereto. The validity of the contract should be determined not by what has been done under it, but by what may be done under it, by what will be its real tendency with reference to trade and monopoly when in full operation.

Where a contract in its terms and its operation transfers from one party to another a lawful business, trade, or occupation actually engaged in, or a lawful exclusive right, and, as an incident thereto, it is agreed that the vendor will not for a reasonable time engage in the same or a similar business within a reasonable territory covered by the business, and such agreement does not unreasonably restrict the available supply of, or access to, or raise the price of any useful commodity, or tend to create a monopoly, it may not be against public policy or unlawful, and consequently may be enforced by the courts if otherwise legal and binding.

The illegality in the agreement or in its operation need not amount to a criminal offense. The test is whether the agreement in full operation will be injurious to the public welfare. If so, it will not be enforced.

The inhabitants of a village have a right to protection from injurious restraint of trade and monopoly in useful commodities in the village without reference to the opportunities afforded for obtaining the commodities in a neighboring town.

Where an agreement in operation has a necessary tendency to restrain trade or to monopoly to the appreciable injury of the public, limitations as to time, place, or subjects contained in the agreement are immaterial.

The validity or invalidity of an agreement that in operation tends to restrain trade or to monopoly is in general determined by the element of whether it is or is not injurious to the public. If injurious in any perceptible degree to any considerable portion of the public, the agreement is contrary to public policy, and will not be enforced. If not so injurious, it may be enforced if otherwise legal and binding.

In this case no established business, trade, profession, or occupation, or lawful exclusive right, was transferred with accompanying good will, but the contract contains a lease of a storehouse and an agreement to relinquish a right common to all to establish a general store in a village, coupled with other agreements that in practical operation necessarily tend to substantially restrain freedom of trade and to monopoly, whether so intended by the parties or not.

Assuming that the corporation had the right to establish and maintain a general store, it obviously had no lawful exclusive right to do so in the village named by the contract, and the agreement to relinquish a right common to all to establish and maintain a general store in the village, if of any benefit to the other contracting party, was not necessary to the protection of the rights in the lease of the storehouse. When this agreement to relinquish a right common to all is taken in connection with the agreement as to the exclusive issuing and redeeming by the contracting parties of merchandise checks to a great number of persons in a village, employees of one of the parties, and with the character of goods the checks would purchase, the relation of the contracting corporation to its employees, the great number of the employees operating in a village, the agreement to induce the employees, loggers, and others to purchase their supplies at the one place, and the agreement to pay 5 per cent. commission on gross sales, it is manifest that the inevitable tendency of the agreement, though ancillary to a lease of a storehouse, is to restrain trade, to stifle competition, to increase prices of useful if not necessary commodities, and to create and maintain a monopoly, so as to injure in some appreciable degree at least a considerable portion of the local public whether such result was intended or not. If the restraint of trade or the monopoly the contract tends to effectuate, in its operation, is injurious to the public to any appreciable degree, the limitations, expressed or implied, as to time, place, or objects are immaterial.

A mere influencing of trade in a lawful manner is not necessarily illegal. The issuing by an employer to employees of "merchandise checks against their wages" to be redeemed exclusively through a merchandise house of another party as alleged in this case may not ipso facto and necessarily be illegal under all circumstances; but under the circumstances of this case such a course of dealing, whether so intended or not, tends to aid in restraining trade and in maintaining a monopoly to the injury of a large number of persons. It does not appear from the record whether the merchandise checks were to be issued before or after wages were due and payable, nor does it seem to be material in this case. Even if it should appear that the village where this contract operated is near a larger town, it would not redeem the contract, since the freedom of trade may be restrained, and a monopoly assisted to the injury of a local public by curtailing the convenience of the public in procuring supplies of useful commodities. Whether the corporation was or was not able to pay its employees in cash does not appear to be material in this case. No element of partnership express or implied appears from the contract or the declaration if that would relieve the agreement of invalidity.

While the rent for a storehouse may properly be a percentage of the business done in the storehouse, yet in this case the agreement to pay 5 per cent. of gross sales, taken in connection with the other parts of the contract and conditions under which it was to operate and with the claim for commissions paid, indicate that such a percentage covers, not only the store rent, but also profits from a business capable of being so conducted as to in some substantial degree restrain trade and maintain a monopoly to the injury of at least an appreciable part of the public in the locality where the business was conducted, and the intention of the parties is of no controlling force.

The inevitable tendency of the contract operating under the circumstances alleged in the declaration is to restrain trade, to stifle competition, and to a monopoly, to the injury of at least a considerable portion of the public affected by the contract, and the contract is consequently violative of the public policy of the State, or the implied principles of law recognized as existing in this State on this subject for the general welfare. This being so, courts of justice will not aid the parties in enforcing the invalid agreements, and the demurrer to the declaration was properly sustained.

EMPLOYERS' LIABILITY—EXCESSIVE DAMAGES—INCOMPETENCE OF EMPLOYEES—*Smith v. Chicago, Peoria and St. Louis Railway Co., Supreme Court of Illinois, 86 Northeastern Reporter, 150.*—Gertrude Smith had recovered damages in the amount of $10,000 for the death of her husband, an engineer on one of the trains of the company. An appeal from the circuit court of Sangamon County resulted in the judgment being affirmed in the appellate court, and again in the supreme court of the State. The action was based on the alleged failure of the employer to exercise due care in the employment of the engineer and conductor in charge of the work train with which Smith's engine collided, as it was claimed that these men were incompetent for the discharge of the duties for which they were employed.

Appellants presented as grounds of appeal that there was no sufficient ground on which to base the charge of incompetency, and that the amount of damages awarded was excessive. Chief Justice Cartwright, who announced the opinion of the court, took up these points in their reverse order, using in part the following language:

> We feel certain that the learned counsel who present and argue the second proposition that the damages awarded by the jury are excessive would be quite unwilling to have us attribute their course to ignorance of the law, and it is fair to assume that they do not expect any attention to be given to the point further than to be again admonished that it can not be raised. The proposition that the amount of damages caused by negligent act or omission is purely one of fact, finally settled by the judgment of the appellate court, is one about which there never could have been any doubt, and yet this court has been required to make that statement in a multitude of cases, running through more than 100 volumes of the reports. In 1883, in the case of Wabash, St. Louis & Pacific Railway Co. *v.* Peyton, 106 Ill. 534, 46 Am. Rep. 705, the court said (page 539 of 106 Ill.): "It is likewise insisted that the damages are excessive. Appellant refers to no text-book or reported case which holds that the assessment of damages is a question of law. On the other hand, by every rule of law it must be considered a question of fact. It is averred as a fact in the declaration. It is averred as a fact, and never questioned by demurrer. On the trial damages are proved by evidence, and they are found by the jury, and not by the court. The proposition seems so obvious that it should not require the decision of a court to establish the proposition." If attorneys have not yet learned of this obvious proposition by its wearisome repetition in so many cases, it would seem to be of no use to state any principle of law in the decisions of the court.
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> The other alleged error questions the ruling of the trial court in refusing to direct a verdict of not guilty on motion of the defendant; and it is insisted that the evidence tending to support the cause of action alleged in the declaration, together with all reasonable inferences which the jury might draw therefrom, was insufficient, as a matter of law, to sustain the verdict.
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> That the death of Smith was caused by the negligence of the engineer and conductor was proved, but the defendant would not be liable, under the declaration, for an injury caused by their negligence unless it resulted from their incompetency, combined with the failure of the defendant to use reasonable care in their selection. It was necessary for the plaintiff, not only to prove incompetency of the engineer or conductor, or both, but also negligence of the defendant in employing them or one of them. The mere happening of an accident would not ordinarily raise a presumption of incompetency (Mobile & Ohio Railroad Co. *v.* Godfrey, 155 Ill. 78, 39 N. E. 590), but the conduct of a person on a single occasion may be entirely sufficient to

demonstrate his unfitness, and, after such an occurrence, to charge the employer with a failure of duty in keeping him in the service. If the employer used reasonable care in the selection of the servant, and had no knowledge of his incompetency, the employer would not be responsible for the consequences resulting on the single occasion when incompetency was manifested. The conduct of the engineer and conductor on this occasion fairly tended to show the unfitness and incompetency of both for the positions in which they had been placed, but the evidence did not show that the engineer had previously manifested any want of competency or that the defendant did not use reasonable care in his selection.

In September, 1904, and January, 1905, the superintendent of defendant did not regard Cuthbertson as competent to take charge of a work train; and, unless the superintendent afterward satisfied himself of his competency, he was guilty of negligence in employing him. Cuthbertson had no experience, between the time that he was rejected as incompetent and June, 1905, which could qualify him to fill the position as conductor. The evidence favorable to the plaintiff fairly tended to prove that Cuthbertson was incompetent to fill the position of conductor, that the superintendent knew him to be incompetent, and that reasonable care was not used in employing him. The trial court therefore did not err in refusing to direct a verdict of not guilty.

EMPLOYERS LIABILITY—RELEASE—RELIANCE ON ADVICE OF COMPANY SURGEON—FRAUD—EVIDENCE—*St. Louis, Iron Mountain and Southern Railway Company v. Hambright, Supreme Court of Arkansas, 113 Southwestern Reporter, page 803.*—W. O. Hambright was a brakeman employed by the company named, and was injured while in such service. He placed himself first under the care of his own physician, but afterwards went to a hospital maintained by the company, where he remained for about two weeks. When he went away he promised Dr. Outten, the chief surgeon, that he would return. Several weeks later Dr. Outten wrote to him, upbraiding him for his failure to return and for his prolonged absence without having obtained a "clearance," or statement of his physical condition, before leaving the hospital. Hambright thereupon returned to the hospital and Dr. Outten gave him a letter to be taken to the claim agent as a basis of settlement. This letter was sealed, and contained a statement of serious injuries with a bare possibility of recovery. Dr. Outten testified that he informed Hambright of the contents of the letter, but this statement the latter denied. The letter was left at the claim agent's office in his absence. Hambright testified that the doctor had told him that his injuries were not serious, and that he would be all right in a few months, this testimony being supported by that of a friend, Phelps, who had accompanied Hambright on his visit to the doctor. There was also a conflict between the testimony of Hambright and that of the claim agent and his employee. Hambright accepted $1,250 from the company and signed a release of all claims of every class arising out of the injuries received. He afterwards sued on the ground of the employers' liability for the injury and alleged fraud in the procurement of the settlement. The circuit court of Miller County gave damages in the amount of $5,000, and the railroad company appealed. The judgment of the court below was affirmed, on grounds that appear in the following extracts from the opinion of the court, which was delivered by Judge Hill:

Appellant says that the evidence is not sufficient to show that the plaintiff was either deceived or misled, or that any fraud was practiced on him in obtaining the settlement. In discussing this it must be taken that the jury has accepted the testimony of Hambright and Phelps and rejected that of Outten and Jones; and the sufficiency of the evidence must be tested solely upon the accredited testimony. In H. & T. C. Ry. Co. *v.* Brown (Tex. Civ. App.) 69 S. W. 651, an employee of the railroad company was injured and was taken to a hospital, where he was treated by Dr. Stewart, the surgeon of the railroad company. The doctor represented to him that the bones of his arm had knitted and united together, that his arm was well, and that as soon as the swelling had passed away his arm would be as good as ever. Brown, the employee, had stated that he was ready to settle with the railroad company whenever the bones of his arm had knit together and his arm was cured. The court said: "The facts in evidence warrant the conclusion that Stewart made the representations and statements to the appellee for the purpose of inducing him to execute the release to appellant, and that the appellee believed the statements were true, and relied upon the same, and was thereby induced to make the settlement and sign the release; that the representations and statements so made by Stewart were false, in that the bones at the time of the trial were not united, and that his arm was practically destroyed in its usefulness. The court correctly submitted this issue to the jury. We can not agree with the contention of appellant that it may escape liability on the ground that the representations and statements made by Stewart was a mere expression of opinion. It was more than an opinion. It was the statement of a fact. The effect of his statement was that the appellee was a sound man, and that the bones of his arm had knitted together, and that it would be all right. It is true this statement may have been predicated upon his opinion as a medical expert, but the opinion is based upon facts of which he possessed knowledge. The fact that the statement made by Stewart was not intentionally false does not affect the right of the appellee to have the release set aside if he was misled by the statement, and executed the release believing the statement was true. In such a case innocent misrepresentations may as well be the basis of relief as where such statements are intentionally false." This case was quoted from and approved by the federal court of appeals of the ninth circuit in Great Northern Ry. Co. *v.* Fowler, 136 Fed. 118, 69 C. C. A. 106. In that case a brakeman on a railroad was injured and was examined by the company's physician, who advised him, after a cursory examination, that his injuries were slight, and that he would be ready for work in two weeks. He consulted no other physician as to the extent of his probable injuries. The decisions touching this exact point are carefully considered and discriminated, and these conclusions reached: "He accepted the statement and opinion of the appellant's surgeon, and on the basis of it received $195 and signed the discharge. We entertain no doubt that such a release executed under a mutual mistake of fact so induced by the appellant should be set aside. It is true that, where there is no misrepresentation or fraud on the part of the releasee, a releasor can not subsequently avoid his release on the ground that his injuries were more serious than he thought them to be, even though his opinion at the time of making the settlement may have been based upon that of a physician employed by the releasee to examine and report on the extent of his injuries; * * * but it is equally true that a mutual mistake of fact or an innocent misrepresentation of the facts of the releasor's injury, made by the releasee's physician, may be effective to avoid a release induced thereby."

The case of T. & P. Ry. Co. *v.* Jowers, (Tex. Civ. App.) 110 S. W. 946, is essentially similar to the case at bar. An employee of the railroad company was injured and sent to the same hospital to which Hambright went, and was under the care of Dr. Vasterling, who was also one of the physicians who attended Hambright while he was at the hospital. The course of dealing between the hospital and the patient was shown to be the same in that case as it was in this. The plaintiff's evidence was that he had settled upon the statement of Dr. Vasterling that his injuries were slight, and it was proved that such was not the case. The court said: "The fifth and sixth assignments are submitted together in the appellant's brief, and assail the court's charge in submitting the issue of bad faith or fraud upon the part of Dr. Vasterling, appellant's physician in charge of the hospital, and Hoeppner, appellant's claim agent stationed at that place, in advising the appellee concerning the extent of his injuries at the time the release was executed. The propositions (two in number) submitted under those assignments indicate that the particular objection was to the action of the court in submitting any such issue at all under the circumstances. The first proposition asserts that fraud can not be predicated upon a representation which is a mere statement of opinion, and not the statement of the fact. The appellants lose sight evidently of the fact that fraud may be based upon the giving of an opinion as well as the statement of any other fact. In this particular suit the contention is relied upon that the physician fraudulently gave an incorrect opinion, and thereby misled the appellee into agreeing to a settlement [citing authorities]. The second proposition assumes as a matter of fact that the physician acted in good faith. That, we think, was an issue for the jury." See, also, on the general principle involved, Railway Co. *v.* Kosischke, 104 Fed. 440, 43 C. C. A. 626, the circuit court of appeals of the eighth circuit. The appellee's evidence fully meets the requirements of the authorities to avoid a release induced by fraud.

It is said that Hambright came direct from his own physicians and ought to have known, and must have known, something of his condition outside of anything Dr. Outten said to him, and that he could not have been misled in this regard. Hambright testified that he had been under Dr. Outten's care from September, and that he did not know his own condition, but relied upon Dr. Outten, and asked him to tell him his true condition. In the third instruction the court predicated plaintiff's case on a reliance upon Dr. Outten's statements, and the verdict means that the jury believed he did rely upon them. Dr. Outten says that his examinations were made in behalf of the employees as well as the railroad; that his employment came from the railroad company and his compensation came from a hospital fund derived from assessments of the employees. Certainly Hambright had a right to rely upon his good faith, and it does not lie in the mouth of the railway company to say that an employee can not safely rely upon statements of its chief surgeon who occupies this delicate position between it and its employees.

It is next argued that the court erred in entertaining this suit without requiring a tender of the amount received in the settlement of December 28th. This point was reserved by exception to the fourth instruction. This contention, however, was settled against the appellant in St. L., I. M. & S. Ry. Co. *v.* Smith, 82 Ark. 105, 100 S. W. 884. In that case, as in this, there was a controversy over a release; one side claiming that it was for a single purpose and the other side claiming that it was a full release. The court said: "So, if the jury found that she was paid the sum of money as compensation only for the inconvenience and delay caused by the collision, or that she was induced to sign the receipt by false representations, which she relied on, as to its contents, she would not be bound to return the sum paid before suing to recover the damages sustained." If plaintiff's evidence was true, then the tender was not necessary; and the defendant did not ask for the converse of the proposition to be submitted.

EMPLOYERS' LIABILITY—SAFE PLACE TO WORK—SUFFICIENT DISCHARGE OF EMPLOYER'S DUTY—ACTS OF SERVICE—*Brown v. People's Gaslight Co., Supreme Court of Vermont, 71 Atlantic Reporter, page 204.*—Charles A. Brown was a laborer employed in laying gas pipes under the immediate direction of a foreman, one Miles, and was injured by the caving in of earth. Action was brought and a verdict for damages secured in the Rutland County court, from which the company appealed. The appeal resulted in a reversal of the judgment of the lower court, on grounds that appear in the following quotations from the opinion of the court, which was delivered by Judge Powers:

Among the nondelegable duties which a master owes his servant is that of providing and maintaining a reasonably safe place in which to work. But this rule does not require the master to supervise the merely executive details of the work as it goes along. These are acts of service, and are within the proper range of the servant's duties. They may be delegated to a competent coservant, and, when so delegated, negligence therein, though resulting in injury, will not support an action against the master. And it matters not whether the offending servant be a foreman, overseer, superintendent, or a mere fellow-workman; the result is precisely the same—the master is not legally responsible—for it is the character of the act in question which determines. So it is that when a master provides his servant with suitable materials and instrumentalities to make safe the place, and a competent foreman to use and apply them, he fully discharges his legal duty, and the negligence of the foreman in the manner in which the appliances are used, or in failing to make use of them at all, will not establish liability on the part of the master.

Cases much like the one in hand are not wanting. In Zeigler *v.* Day, 123 Mass. 152, the defendant was a contractor engaged in the construction of a sewer through the streets of Cambridge. The plaintiff was at work for him excavating a trench through soil more or less sandy, under the direction of one Winning, who had charge of the work as superintendent, and whose skill and competency were admitted. For the safety of the men in the trench it was necessary in some places to shore up the sides. The necessity for this, as well as the proper mode of applying the safeguards was from the nature of the case left to be determined by the superintendent as the work progressed. There was no evidence that the defendant failed to furnish sufficient and suitable material for the construction of the required safeguards, or that he was chargeable with any specific personal neglect or knew of the cause of this injury, though he was occasionally present as the work went on. In granting a nonsuit, the court said: "In the case at bar the work was committed to the supervision of a skillful and competent superintendent. It required for the protection of the men the frequent use of temporary structures, the location and erection of which, as the digging progressed, was a part of the work in which the superintendent and the men under him were alike employed, and for the preparation of which, as in case of the scaffold of the mason or the carpenter, the master is not liable, unless there is something to show that he assumed it as a duty independent of the servant's employment."

At the time of his injury the plaintiff [Brown] was directed by Miles to go into the ditch and dig out a bell hole, [i. e., an enlargement of the trench for the accommodation of the calker], and to hurry about it so that the joint could be calked before night. The walls of the ditch were not shored up, though the defendant's superintendent testified (and this was not in any way contradicted) that the defendant supplied planking and bracing timbers to protect dangerous places, if any occurred. The plaintiff entered the ditch pursuant to Miles' order, and began the work assigned him. While so engaged, he encountered a stone in the bank, and, while digging around it to remove it, the east bank caved onto him, and caused the injuries herein sued for. After the plaintiff went into the ditch, and before the bank caved, a crack appeared in the dirt thrown up from the ditch running along parallel with the ditch, to which the calker called Miles' attention, suggesting that the bank ought to be braced to prevent caving. Miles replied, in substance, that it would stand long enough to get the joint calked, and gave the plaintiff no warning. The bank caved along this crack. It is urged that the foreman's knowledge of this crack and the plaintiff's ignorance of it save the case for the plaintiff, on the ground that it became the duty of the master to warn the servant of a danger known to him, but unknown to the servant. Such is not the case. The danger was not in a legal sense latent. The crack was not so much the source of danger as it was the manifestation of it. But, in any view, it was in character obvious, though unseen by the plaintiff. The duty to warn is coextensive with the duty to exercise care. If it was the duty of the master to protect the plaintiff from the danger which threatened, it was his duty to warn him of the imminence of the danger indicated by the crack, otherwise, not. So it comes back to the question hereinbefore discussed. However great the moral obligation resting on the foreman to warn the plaintiff, his fellow-laborer, he did not, in his neglect to do so, represent the defendant, for the master's duty had been fully performed. The omission of the foreman in this behalf, like his omission to make use of the shoring, was his own, and not that of his master—an omission which comes within the fellow-servant rule.

LABOR ORGANIZATIONS—LEGALITY—MONOPOLIES—BOYCOTTS—CONSPIRACY—INJUNCTION—*Lohse Patent Door Company v. Fuelle et al., Supreme Court of Missouri, 114 Southwestern Reporter, page 997.*—The company named was a manufacturer of sashes, doors, and woodwork generally, for use in the construction of buildings, and had sued in the St. Louis circuit court to secure an injunction against a boycott. The defendants were officers and representatives of the "Carpenters' District Council," organized in accordance with the terms and rules of the "United Brotherhood of Carpenters and Joiners of America." It was charged in the petition that it was the purpose of these organizations, in cooperation with others of like nature, to so control the building business of St. Louis as to compel the petitioners to employ only union men, under conditions fixed by the unions, and thus to secure and maintain a monopoly, in that particular line of business, in behalf of the members of such associations. In furtherance of this object a boycott had been established against the plaintiff and against all builders purchasing or using the products of the company.

The petition described the methods of the boycott, the interference with the company's employees, who, it is alleged, were satisfied with their employment and were not seeking aid from the organizations named, and also set forth the fact of the insolvency of defendants. Besides asking for an injunction, the dissolution of the organizations was asked for, as being monopolistic and against public policy.

The petition was demurred to, thus admitting the facts, but holding that they did not constitute a cause of action against the defendants. This demurrer was sustained by the St. Louis circuit court, and the petition was dismissed. The company appealed, securing a reversal of the lower court, and the case was remanded for a new trial.

The opinion was delivered by Judge Woodson, who first took up the question of monopoly as charged by the plaintiff. On this point he said:

> According to the allegations of the petition and admissions of the demurrer, the United Brotherhood of Carpenters and Joiners of the City of St. Louis, and the various other associations with which it affiliates, are composed of carpenters, joiners, and other persons who do carpenter work and other labor in the construction of houses and other buildings in the city of St. Louis, and throughout the country. It is alleged and admitted that the object and purpose of these associations is to shorten the hours of work and to increase the pay they are to receive for their labor. While it might be conceded that labor organizations might be proper subjects for legislative control and regulation, yet the legislature has not in its wisdom seen proper to do so; and at common law personal service—an occupation—could not be the subject of a monopoly. In discussing that question, in the case of State ex rel. *v.* Associated Press, 159 Mo., loc. cit. 456, 60 S. W. 91, 104, 51 L. R. A. 151, 81 Am. St. Rep. 368, this court used this language: "But there is nothing here on which a monopoly can attach. The business is one of mere personal service—an occupation. Unless there is 'property' to be 'affected with a public interest there is no basis laid for the fact or the charge of a monopoly.'" The authorities seem to be uniform in holding that individuals have a perfect legal right to form labor organizations for the protection and promotion of the interest of the laboring classes, and deny the power to enjoin the members of such organizations from peaceably withdrawing from the service of the employer. [Cases cited.] These decisions are based upon the law which permits everyone to enter into any kind of a contract which has for its object and purpose the protection and promotion of the interest of the parties thereto, as well as the betterment of their condition in life; and that right to so contract is not curtailed or abridged if, perchance, the contract indirectly or incidentally operates in restraint of trade. We must therefore hold that the United Brotherhood of Carpenters and Joiners and their allied associations, whom the defendants represent, are not unlawful combinations made and entered into in restraint of trade, but are legal and highly laudable when confined within proper bounds.

On the point of the boycott the court said:

> The second proposition presented for consideration seems to be equally well settled by the authorities, and nothing we might say upon the question could throw any light upon it or strengthen the principle of law upon which it is founded. We will therefore content ourselves by simply restating the rule as we find it in the numerous adjudications of this country, and quote from a few leading cases showing its application.
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> In brief, the petition charges defendants and those with whom they are affiliated with having entered into a conspiracy or an

unlawful combination to injure and damage plaintiff's business by having coerced and intimidated certain contractors and builders from purchasing and using all building materials manufactured by it in any building to be constructed by them by prohibiting their members from working upon all buildings in which plaintiff's said materials were being used. The demurrer admits the allegations of the petition to be true, except the allegation that the conduct of defendants is unlawful. In other words, counsel for plaintiff contends that the petition, in short, charges defendants with boycotting plaintiff's business, and that the demurrer admits the charge to be true; while counsel for defendants contends that the petition only charges them with having entered into an agreement to protect their own interest, and that the conduct complained of is not for that reason unlawful.

The word "boycott" has been defined by many courts, in different language, but all agree substantially as to the meaning of the word. After an extensive review of the authorities, the supreme court of Minnesota, in the recent case of Gray *v.* Building Trades Council, 91 Minn., loc. cit. 179, 97 N. W. 666, 63 L. R. A. 753, 103 Am. St. Rep. 477 [Bulletin No. 53, p. 955], defines the word in the following language: "A boycott may be defined to be a combination of several persons to cause a loss to a third person by causing others against their will to withdraw from him their beneficial business intercourse through threats that, unless a compliance with their demands be made, the persons forming the combination will cause loss or injury to him; or an organization formed to exclude a person from business relations with others by persuasion, intimidation, and other acts which tend to violence, and thereby cause him through fear of resulting injury to submit to dictation in the management of his affairs. Such acts constitute a conspiracy, and may be restrained by injunction." If that is the proper definition of the word "boycott," then the petition clearly charges the defendant with being guilty of boycotting plaintiff's business, for the reason, as before stated, the petition charges the defendants with having formed a combination to injure plaintiff's business, by having caused the builders of the city of St. Louis, against their will, to withdraw from plaintiff their beneficial business intercourse through threats that, unless a compliance with their demands be made, the defendants will cause a strike to be called against the said business. All the authorities hold that a combination to injure or destroy the trade, business, or occupation of another by threatening or producing injury to the trade, business, or occupation of those who have business relations with him is an unlawful conspiracy, regardless of the name by which it is known, and may be restrained by injunction.

Many cases were then cited, with extended quotations, after which it was said:

We might prolong this opinion by citing and quoting from many more of the hundreds of reported cases, where this subject has been discussed by the state and federal courts of the country, but no wise purpose would be served by doing so, for the reason that they are all in harmony with the views expressed by the various courts above mentioned.

During the oral argument it was suggested by counsel that the case of Clothing Co. *v.* Watson, 168 Mo. 146, 67 S. W. 391 [Bulletin No. 44, page 157], announced views not in harmony with those expressed by the courts in the case before cited. We do not so understand that case. By a careful reading of that case it will be seen that the question there discussed was whether or not, under the constitution, defendants in that case could be enjoined from publishing a boycott, and it was there held that he could not be so enjoined; but that is not the purpose of this suit. The clear object of this case is to prohibit the defendants from continuing the boycott in force heretofore declared, or to enjoin the defendants from declaring a threatened boycott against plaintiff's business, and not to enjoin its publication. If the boycott itself is enjoined, there would be no occasion for complaint against its publication.

Learned counsel for defendants, several times, during the course of the oral argument of this case, asked the question: If a single individual may lawfully do all of the things which are charged against the defendants, then why may not two or more persons agree to do the same things without violating the law? The answer is plain and simple. Neither the individual nor two or more persons can lawfully conspire to do the things charged. In the first place, the individual can not do the things charged in the petition at all, either legally or illegally, for the reason he can not conspire with himself to injure plaintiff's business, however well his intention may be to do so; nor can he intimidate the builders from using materials manufactured by plaintiff, for the reason he has no associates bound to him by contract or otherwise with which to intimidate them. It is true, the individual might make up his mind to injure plaintiff's business, and determine in his own mind that he would work such injuries by threatening to no longer work for the builders and contractors if they continued to use materials manufactured by the plaintiff; but the practical working of such an undertaking by an individual would result in most, if not in all, instances in such a small loss to the builders and contractors, over and above the profit they would probably make by continuing to deal with plaintiff, that the threat would have but little or no intimidating effect upon them, and in no manner force them from doing business with plaintiff. Certainly the law would take no notice of such infinitesimal loss nor such slight intimidation. Lex non curat de minimis.

But so much can not be said regarding combinations or conspiracies formed between two or more persons to injure and destroy the business of a person by means of a boycott. The books are full of cases where such combinations or conspiracies have wrought great injury and loss, and even wrecked and destroyed great and powerful business institutions, and, if left untrammeled, would cause the strongest of them to fall, and the very foundation of our Government to crumble. Such combinations are differentiated from the labor organizations mentioned in paragraph 1 of this opinion by the fact that they are formed for the direct purpose of protecting and promoting the interests of the laboring classes, which only indirectly and incidentally operate in restraint of trade; while these have for their direct object the immediate effect to injure and damage the business of the persons at whom they are directed, and thereby compel them to discharge the nonunion laborers, and thereby indirectly and incidentally protect and benefit the parties to the combination or conspiracy. All of the authorities permit and encourage the former organizations in carrying out their laudable purposes, but the law with an equally firm hand prohibits all combinations and conspiracies which are formed for the purpose of working injury and damage to the business of another. We are, therefore, of the opinion that the trial court erred in sustaining the demurrer to the petition.

LABOR ORGANIZATIONS—MEMBERSHIP—EMPLOYERS OF LABOR—BOYCOTT—SECONDARY BOYCOTT—CONSPIRACY—INJUNCTION—COMPLETED ACTS—INTERFERENCE WITH EMPLOYMENT—*J. F. Parkinson Co. v. Building Trades Council of Santa Clara County et al., Supreme Court of California, 98 Pacific Reporter, page 1027.*—The company named was owner and proprietor of a lumber yard, a plumbing and tinning shop, mill, etc., while the Building Trades Council was an organization made up of delegates from various labor unions of the county. This organization had for its aim the enforcement of union rules and conditions of employment throughout Santa Clara County, in the industries represented. In 1904 the plaintiff company had employed some nonunion men in the erection of lumber sheds, which gave rise to a controversy between it and the council, and before this was settled a workman was found to be employed in its tin shop who was not a member of the tinner's union. His discharge was demanded, unless he would join the union. He agreed to join, but found that the fee was $50 instead of $25 as he at first supposed. He then took some stock in the company, and asked for a master tinner's card at a much lower fee, on the ground that he was an employer. That the purchase of the shares constituted him an employer was denied by the council, and in this the court agreed, saying:

> A stockholder of a corporation—even a large and preponderant stockholder—is not in legal contemplation the employer of those who are working for the corporation, which is a person distinct from its members, and as such the only employer in the case. Aside from this technical view, it is equally clear that the holder of a minute fraction of the stock of a corporation from which he is receiving wages is not his own employer in any substantial sense. As to this branch of the dispute, therefore, the position of the union and of the council in denying Waterman's claim to be a master tinner within the meaning of the union rules was clearly correct.

The dispute continued until Parkinson's men were called out, his shop declared unfair, and a notice sent to his customers that union men would not work on materials purchased from the boycotted company. These customers, or many of them, ceased dealings with the company, some of them canceling unfulfilled orders. The company then asked for an injunction, which was granted by the superior court of Santa Clara County, together with a judgment of $1 damages and costs in an amount of $304.25. This judgment was, on appeal, dissolved by the supreme court, Judge Shaw dissenting and Judge Sloss dissenting in part. Three other judges held somewhat different opinions on certain matters of argument, but concurred in the results. The opinion of the court was delivered by Chief Justice Beatty.

It appeared from the record that Parkinson's business was not actually made to stop except for a short time, but that there was a substantial loss of profits for a time by reason of the loss of old customers. Business had been resumed with the employment of nonunion workmen, and no force, threat, violence, or intimidation were shown, nor was there any picketing of the company's premises or interference with its customers. The most serious charge proved against the council was that its business agent had told Mr. Parkinson that the council would drive him out of business if he refused to observe their rules. As to this the court said:

> This, however, was merely an expression of the business agent's opinion of the effect of declaring the plaintiff unfair. It was a warning, or caution, intended no doubt to force compliance with the council's demands, but evidently it did not have that effect, for Mr. Parkinson, being of a different opinion, stood his ground, and accepted the consequences.

Continuing the court said:

> There was also some evidence that in three instances individual members of some of the unions had warned some of the strikers that they would incur some danger of personal violence if they returned to work while the plaintiff remained unfair, but these threats were not authorized or countenanced by the council or any of the unions, and not a single act of violence was proved against anyone who did return to work. It was found by the court upon evidence which fully sustains the finding that the plaintiff had been injured by the acts of the defendants in an amount not susceptible of computation, and it was found that a continuance of such acts would cause a damage irreparable, for the reason, I suppose, that its amount could not be computed, and for the same reason that the plaintiff had no plain, speedy, and adequate remedy at law. It was not found that the defendants were insolvent or unable to respond in damages.
>
> In reference to the word "unfair," it clearly appears that, as employed by the defendants and labor organizations generally, it has a technical meaning well understood by the plaintiff and by all the persons to whom the council sent notices that plaintiff had been declared unfair. Such declaration means, and in this instance was understood by all parties concerned to mean, not that the plaintiff had been guilty of any fraud, breach of faith, or dishonorable conduct, but only that it had refused to comply with the conditions upon which union men would consent to remain in its employ or handle material supplied by it. The sole effect of the notice to the contractors was that a majority of them ceased to deal with the plaintiff, at least for a time, and some of them countermanded orders for lumber and other material previously sent it.

Can it be said, in view of this more specific and detailed statement of the probative facts involved in the general finding of the trial judge, that the defendants entered into a conspiracy for the purpose of compelling the plaintiff, by coercion and intimidation, to subject its business to their control? Can it be said that they entered into a conspiracy at all? A combination there certainly was, but it had no reference to the plaintiff except as the business of the plaintiff put it into the general class (employers of labor) who would necessarily be affected by the enforcement of the regulations of the unions. Their object was to secure higher wages, shorter hours, and more favorable conditions generally than employers of labor might be willing to concede, and just so far as they might be successful in accomplishing this object it may be assumed that employers, as a class, the plaintiff included, would incur a corresponding loss. But assuming all this, would that constitute the combination a conspiracy? A conspiracy is a combination of two or more persons to accomplish by concerted action a criminal or unlawful purpose, or a lawful purpose by criminal or unlawful means, and, to support the conclusion that these defendants were guilty of a conspiracy, it must be held that their purpose was at least unlawful if not criminal, or their purpose being lawful that they proposed to attain it by the employment of some unlawful means.

Limiting our consideration for the present to this question of conspiracy, it is clear that the avowed object of these organizations—the several unions of workingmen and the council in which they were combined—was in no sense unlawful, and the discussion may be confined to the question whether the means proposed for its attainment were unlawful, a question as to which there is a wide divergence of view disclosed by the decisions of the courts of different jurisdictions, and often by the differing opinions of judges of the same court. There is, however, at the present day a tolerably uniform consensus of judicial opinion as to some fundamental principles which form the basis of discussion in all that class of cases, which, for convenience, may be designated as boycotting cases. In one of the more recent of these (National Protective Association *v.* Cumming, 170 N. Y. 315, 63 N. E. 369, 58 L. R. A. 135, 88 Am. St. Rep. 648 [Bulletin No. 42, p. 1118]) the seven justices of the court of appeals were divided, four to three, as to the lawfulness of the avowed object of the defendants, and as to the means employed by them against the plaintiff. Chief Justice Parker—three of his associates concurring—held both object and means to have been lawful, while Justice Vann, with the concurrence of the other two justices, condemned the means employed by the defendants to accomplish their purpose, not because the acts of defendants were otherwise unlawful, but because they were rendered unlawful by the selfish and censurable motive which inspired them. "The object of the defendants," he concluded, "was not to get higher wages, shorter hours, or better terms for themselves, but to prevent others from following their lawful calling." This conclusion was based upon evidence which showed clearly enough what appears as clearly in this case—that the immediate object of the defendants was to exclude the competition of men outside of their unions. This purpose Judge Vann considered so selfish, and its accomplishment so opposed to public policy and common right as to infect acts otherwise entirely lawful with the taint of illegality. The opposing opinion of the Chief Justice—the majority opinion—seems to be rested partly upon the ground that, in order to secure employment on more favorable terms for themselves, individuals have an absolute right to combine for the purpose of preventing the employment and competition of others, and partly upon the further and independent ground that, whether such right is absolute or not, every man is clearly privileged to stop work with or without reason whenever he can do so without violating his contract, and that no one can question his motive, since a bad motive does not convert an act otherwise lawful into a ground of action. This last proposition embodies the rule of decision which was approved by this court in the case of Boyson *v.* Thorn, 98 Cal. 578, 33 Pac. 492, 21 L. R. A. 233, and which has recently been reaffirmed in the much discussed case of the People *v.* Schmitz, 94 Pac. 419, 15 L. R. A. (N. S.) 717.

As to what are lawful acts in furtherance of such objects as were proposed by the defendants in this case, the consensus of recent judicial opinion above referred to can not be better illustrated than by quoting the propositions upon which the majority and the minority of the New York court of appeals, despite their opposite conclusions in National Protective Association *v.* Cumming, were entirely agreed. Chief Justice Parker at the outset of his opinion (170 N. Y. 320, 63 N. E. 369, 58 L. R. A. 135, 88 Am. St. Rep. 648) says: "I shall assume that certain principles of law laid down by Judge Vann are correct, namely: 'It is not the duty of one man to work for another unless he has agreed to, and if he has so agreed, but for no fixed period, either may end the contract whenever he chooses. The one may work or refuse to work at will, and the other may hire or discharge at will. The terms of employment are subject to mutual agreement, without let or hindrance from anyone. If the terms do not suit, or the employer does not please, the right to quit is absolute, and no one may demand a reason therefor. Whatever one man may do alone, he may do in combination with others, provided they have no unlawful object in view. Mere numbers do not ordinarily affect the quality of the act. Workingmen have the right to organize for the purpose of securing higher wages, shorter hours of labor, or improving their relations with their employers. They have the right to strike; that is, to cease working in a body by prearrangement until a grievance is redressed, provided the object is not to gratify malice or inflict injury upon others, but to secure better terms of employment for themselves. A peaceable and ordinary strike, not to harm others, but to improve their own condition, is not in violation of law.'" This is a most conservative statement of the law. It embraces nothing that is not conceded at this day by even the most determined opponents of the principle of the strike, and contains in the concluding sentence a qualification which the rule of Boyson *v.* Thorn would compel us to disregard. In case of a peaceable and ordinary strike without breach of contract, and conducted without violence, threats, or intimidation, this court would not inquire into the motives of the strikers. Their acts being entirely lawful, their motives would be held immaterial. But, taking the doctrine as stated by Justice Vann with all its qualifications, it suffices for the decision of everything of real importance in the present controversy, so far as the council and its constituent unions are concerned. The rule that their members could not work with nonunion men, or handle material supplied by an employer of nonunion men, was adopted before any difference had arisen between them and the plaintiff or its manager. It was a rule which they supposed would benefit them, and that was its sole purpose. Whatever others may think of the policy or justice of such a rule that is a matter outside the province of the courts, and as with regard to other questions of economic or political aspect, the remedy, if a remedy is needed, must be found by the legislature. In the meantime, and for present purposes, we must recognize the fact that this rule, as established by the council and the affiliated unions, was devised for the promotion of an object certainly not unlawful, that the occasion that called for its application was the voluntary act of plaintiff's agent, and that with two or three possible exceptions to be hereafter noticed the defendants did nothing unlawful in their attempt to make it effective.

Certainly it was not unlawful to call out the union men, and it was not unlawful for the men to cease work which they were bound by no contract to continue. It was no doubt a technical trespass for the business agent of the council to enter the premises of plaintiff for the purpose of calling the men out for which the plaintiff might have recovered nominal damages in an action at law, but, it was no ground for an injunction in the absence of any evidence of a threatened repetition of the act. Was it unlawful to send the written notice to the contractors employing union labor that the plaintiff had been declared unfair, and that union men could not work for it or handle material supplied by it till further notice? There are authorities on both sides of this question, but I think those which would answer it in the negative have the better reason. The contractors were working in harmony with the unions (as indeed the plaintiff had previously done), and fair dealing required that the council, representing and acting for the unions, should protect such contractors from any loss they might incur if left in ignorance of the action it had taken. If they had not sent the notices some of those contractors who felt constrained to stop dealing with plaintiff when informed that it had been declared unfair might have purchased material which they could not have used, and it is only upon the assumption that such purchases would have been made that the plaintiff can base a claim that it was damaged by the notices. But can plaintiff make such a claim as a ground for equitable relief? It seems very clear that it can not; for, with full knowledge that it had been declared unfair and of all the consequences flowing from that declaration, it would not have been justified in selling material to a contractor employing union men without disclosing a fact so material to his freedom of contract. And, if good faith and fair dealing imposed an equal obligation upon the plaintiff and the council to inform the contractors of what the plaintiff knew, it is difficult to see what right of plaintiff was infringed by the sending of the notices. Their only effect was to enable the contractors and plaintiff to conduct their future dealings on equal terms. Nor was there anything unlawful in the presentation to the plaintiff of an agreement embodying the conditions upon which union men would consent to reenter its service and handle the output of its mill and shops. Conceding that the conditions of the proposed contract were intolerable, the right to propose them stood upon the same plane as the right to reject them, and no right of the plaintiff was infringed unless it can be held that men who are free to work or not to work, with or without reason, are breaking the law in proposing unreasonable terms as a condition of entering the employment of another. If this were so, why would it not equally follow that an employer would be breaking the law by proposing to men seeking employment conditions of service which they might consider intolerable, or a court deem unreasonable? Neither proposition can be admitted. The fact that the business agent of the council in the course of the dispute over the Waterman affair told Mr. Parkinson that they would drive him out of business if he refused to observe their rules is material only in so far as it is an item of evidence tending to show that the course pursued by the council was dictated by a malicious purpose to injure the plaintiff, and not by a desire to benefit its members. I think myself, as I have in substance said, that it has very slight probative force for that purpose, and that it is completely refuted by all the facts of the case. But, conceding that it might have warranted the superior court in concluding that the motives of defendants were tinctured with malice, it can not be denied that all the acts of the council and its affiliated unions were lawful, and that they were adapted to the promotion of the plans devised by them for bettering the condition of the members. Being so adapted, and being lawful in themselves, they could not be rendered actionable by the mere fact that some feeling of animosity had been engendered in the course of the controversy between the parties.

One other consequence of the strike and the notice to the contractors remains to be considered. Some of the contractors to whom the notices were sent countermanded orders for building material which they had already placed with the plaintiff. This it may be conceded was a breach of their contracts, and the law is pretty thoroughly settled both in England and in this country that causing another to violate his contract with a third party, without a legal justification, is an actionable injury, from which it follows that if the defendants by sending the notices to the contractors caused some of them to break their contracts, and did so maliciously and without justification, they made themselves liable at least to an action for damages. But I do not think it can be said that the sending of the notices was without justification. The plaintiff had been declared unfair, and it was certain that, until that action of the council should be reversed, no member of any of the unions—so long as he remained a member—would handle material supplied by the plaintiff. The contractors to whom the notices were sent were all employing union men, and it was no less the duty of the plaintiff than of the council to inform them, with a view to future transactions, that they could not use material supplied by the Parkinson Company without engaging nonunion men in place of the men they had. If this is so—if the notice to the contractors was proper and essential to fair dealing, as between them and the plaintiff—the fact that some of them violated their existing contracts can not be deemed a wrong caused by the defendants. It was a wrong for which the contractors alone were responsible. But, even if it could be held that the action of the council in sending the notices was without justification and malicious, something would still be wanting to sustain the injunction. The notices had all been sent before this action was commenced, and there was no evidence of any threat to send notice to any other person. An injunction lies only to prevent threatened injury, and has no application to wrongs which have been completed, and for which the injured party may obtain redress by an action at law. This proposition involves a consideration of the sufficiency of the evidence to support the fifth finding of the trial court: "That said defendants threatened to continue to coerce and intimidate plaintiff and its patrons and customers to the irreparable damage and injury of plaintiff." Being challenged to point out the evidence to support this finding, counsel for respondent cites us to the testimony of only one witness (Harrison, an officer of the council), the entire substance of which is a mere restatement of the rule forbidding union men to work for a person declared unfair, or to handle his material. The finding, therefore, so far as it is sustained by the evidence, means no more than this: There is a standing warning that union men will not work for plaintiff while it remains on the unfair list, or handle its material. This is the whole extent of the coercion and intimidation threatened, and against such a threat an injunction would be utterly impotent. To enjoin men from not working would be wholly ineffective unless there resides in the courts a power to compel them to go to work. But there is no such power. A court of equity can not even enforce specifically a contract for personal services, and much less can it enforce the performance of such services in the absence of any contract.

I have not overlooked the fact that there was evidence that two or three individual members of the unions used threatening language in one or two instances towards other members who spoke of returning to work, and there may have been reason to conclude that they would continue to employ threats of the same character to deter others from seeking employment with the plaintiff. If so, the court would have been justified in enjoining those individuals, but there was nothing to justify an injunction against the council or the unions, or their officers, or the large number of individual members who made no threats.

Any injury to a lawful business, whether the result of a conspiracy or not, is prima facie actionable, but may be defended upon the ground that it was merely the result of a lawful effort of the defendants to promote their own welfare. To defeat this plea of justification the plaintiff may offer evidence that the acts of the defendants were inspired by express malice, and were done for the purpose of injuring plaintiff, and not to benefit themselves. The principle is the same which permits proof of express malice to defeat the plea of privilege in libel, or the defense of probable cause in actions for malicious prosecution or false imprisonment. In this case there was overwhelming proof that the council, when the occasion arose, simply put in force a rule long before adopted for their own benefit, and not directed against the plaintiff or any particular person. Nor did the council, the unions, or their members generally use any unlawful means to injure the plaintiff, unless it was unlawful to send the notices. I have expressed the opinion that so far from being unlawful the sending of the notices was only the fulfillment of a duty under the circumstances, but whether so or not, since the contractors doing business in Palo Alto and employing union men had all received the notices before the action was commenced, and there was no threat to send notices to any other persons, there was nothing to enjoin.

As to the sending of notices that a firm or corporation has been declared "unfair," the authorities are by no means uniform that such notices are unlawful. In the case of Gray *v.* Building Trades Council, 91 Minn. 171, 97 N. W. 663, 63 L. R. A. 753 [Bulletin No. 53, p. 955] (a Minnesota case cited by respondent), the supreme court modified an injunction by striking out that part which restrained the giving of unfair notices, and this for reasons equally applicable to the present case.

There is nothing in our decision in Goldberg *v.* Stablemen's Union, 149 Cal. 429, 86 Pac. 806, 8 L. R. A. (N. S.) 460 [Bulletin No. 68, p. 181], at all inconsistent with the views herein expressed. By their demurrer to the complaint the defendants in that case admitted the truth of all that was charged, and the injunction as modified restrained only acts of violence and intimidation.

For the reasons above stated, the judgment of the superior court is reversed.

One judge concurred in full. As already stated other opinions were written, concurring in the judgment but not approving the argument in its entirety. Thus Judge Sloss said in part:

The real question in the case turns upon the activities of the defendants exerted in two ways: First, in ceasing to work for the plaintiff (striking); second, in notifying (or threatening, if that term be preferred) the customers of plaintiff that workmen affiliated with the Building Trades Council would not work for contractors using materials purchased of plaintiff. That workmen employed by the Parkinson Company had a right to leave its employ whenever they desired, and for any reason that might seem to them sufficient, is universally conceded. Was it unlawful to notify contractors dealing with the Parkinson Company that union men would not continue to work for them if they purchased material of said Parkinson Company? In this inquiry I think it is unimportant that the defendants were merely acting in accordance with a rule adopted before any difference with the plaintiff had arisen. The opinion of the Chief Justice appears to proceed upon the theory that, since the defendants had bound themselves to act in a certain way in the event of a controversy of this kind, it was not only proper, but laudable, for them to notify contractors of their intended action and of the consequences which would follow to contractors who should continue to deal with the plaintiff. More than this, that it was in some way incumbent upon plaintiff to notify contractors dealing with him that a continuance of their patronage would be likely to result in loss to them. I can not agree to the proposition that the rights of the parties are in any way affected by such considerations. If the defendants' course of conduct amounted to an unlawful interference with plaintiff's rights, it was not made lawful by the fact that the defendants had decided, in advance, to act in this way whenever an occasion should present itself.

But was their action unlawful? They had a right, as has been said, to cease working for Parkinson. They had an equal right to cease working for any other employer. Upon what ground, then, is it claimed that, while their refusal to work for plaintiff gave plaintiff no cause of complaint, the refusal to work for others did give plaintiff a ground of action? Because, it is said, they are bringing to bear upon the Parkinson Company, with which they have a controversy, the pressure of loss inflicted by third persons, not connected with the main dispute, and are, by holding over these third persons the risk of financial loss, compelling them against their will to inflict upon Parkinson the damage resulting from a cessation of their patronage. This is the argument commonly advanced to establish the illegality of what has been called, in much of the recent discussion of the subject, a "secondary" rather than a "primary" boycott. I do not see that we are helped to a solution of the question of the illegality of the defendants' acts by looking into the "motive" or "intent" with which they acted. Even if we assume, contrary to the decisions of this court, that an improper motive may, as a general proposition, render actionable an act otherwise lawful, or, to use another form of statement, that damage intentionally inflicted will be actionable unless its infliction can be justified by showing that it was inspired by a proper motive, the motive with which these defendants acted was not, in my opinion, one which the law regards as improper. The defendants were seeking in all they are shown to have done to secure employment by the plaintiff for themselves, to the exclusion of those not associated with them, and to secure that employment upon terms deemed satisfactory or advantageous to them. That is the effort of every dealer in goods. It is the struggle of competition, and is no more to be frowned upon where the subject of trade is labor than where it is a specific commodity. The uniting or combining of a number of persons to accomplish a lawful object by lawful means will not per se render the conduct of the many any more unlawful than would be the same conduct on the part of any one of them. "It is plain," as is said by Mr. Justice Holmes in his dissenting opinion in Vegelahn *v.* Guntner, 167 Mass. 92, 108, 44 N. E. 1077, 1081, 35 L. R. A. 722, "from the slightest consideration of practical affairs, or the most superficial reading of industrial history, that free competition means combination, and that the organization of the world, now going on so fast, means an ever increasing might and scope of combination. * * * One of the eternal conflicts out of which life is made up is that between the effort of every man to get the most he can for his services, and that of society, disguised under the name of capital, to get his services for the least possible return. Combination upon the one side is patent and powerful. Combination on the other is the necessary and desirable counterpart, if the battle is to be carried on in a fair and equal way."

The injunction then, must rest upon the principle that it is unlawful, in an effort to compel A. to yield a legitimate benefit to B., for B. to demand that C. withdraw his patronage from A. under the penalty of losing B.'s services or patronage to which he has no contract right. That there are many cases sustaining the affirmative of this proposition is true. [Cases cited.] So are there many to the contrary. [Cases cited.]

Upon a consideration of the authorities, I think the sounder rule is that one who is under no contract relation to another may freely and without question withdraw from business relations with that other. This includes the right to cease to deal, not only with one person but with others; not only with the individual who may be pursuing a course deemed detrimental to another who opposes it, but with all who by their patronage aid in the maintenance of the objectionable policies. In other words, if the defendants violated no right of the Parkinson Company by refusing to work for it, they violated none by refusing to work for contractors who used material bought of Parkinson. Such refusal, as is shown in the opinion of the Chief Justice, and as is stated in the testimony of plaintiff's manager and principal witness, was the "sum total of the interference" which was practiced or threatened. An agreement by shipowners, in order to secure a carrying trade exclusively for themselves, that agents of members should be prohibited upon pain of dismissal from acting in the interest of competing shipowners; a combination of retailers binding the members to refuse to purchase of wholesalers who should sell to nonmembers of the combination; an agreement of contractors to withdraw their patronage from wholesalers selling to a contractor who had conceded the demands of his employees for an eight-hour day; a threat by a railroad company to discharge any employee who should deal with the plaintiff; a threat by an employer that he would discharge any laborer who rented plaintiff's house—have been held to give no right of action to the individuals affected. The defendants in each case were held to be acting within their absolute legal right in entering or refusing to enter into business relations with persons to whom they were not bound by contract. I see no reason why workmen have not the same absolute right to dispose of their labor as they see fit. So long as they abstain from breach of contract, violence, duress, menace, fraud, misrepresentation, or other unlawful means, they may lawfully inflict such damage as results from the withholding of their labor or patronage. To quote again from Judge Holmes' opinion in Vegelahn *v.* Guntner: "If it be true that workingmen may combine with a view, among other things, to getting as much as they can for their labor, just as capital may combine with a view to getting the greatest possible return, it must be true that, when combined, they have the same liberty that combined capital has to support their interests by argument, persuasion, and the bestowal or refusal of those advantages which they otherwise lawfully control." The terms "intimidation" and "coercion," so frequently used in the discussion of this question, seem to me to have no application to such acts as were here committed. One can not be said to be "intimidated" or "coerced" in the sense of unlawful compulsion by being induced to forego business relations with A., rather than lose the benefit of more profitable relations with B. It is equally beside the question to speak of "threats" where that which is threatened is only what the party has a legal right to do. It may be that the combination of great numbers of men, as of great amounts of capital, has placed in the hands of a few persons an immense power, and one which, in the interest of the general welfare, ought to be limited and controlled. But if there be, in such combinations, evils which should be redressed, the remedy is to be sought, as to some extent it has been sought, by legislation. If the conditions require new laws, those laws should be made by the lawmaking power, not by the courts.

The dissenting opinion of Judge Shaw accepted the position that motive can not be questioned and that the means by which interference is accomplished is the test of lawfulness or unlawfulness. Assuming that the use of duress, menace, fraud, or undue influence in bringing about an injurious act was unlawful, Judge Shaw based his dissent on the ground that the influence of associated persons was so increased by the fact of association as to make acts which would not be annoyance or coercion if committed by one, objectionable where committed or supported by numbers. He said in part:

The evidence showed that at least seven of the plaintiff's important customers quit dealing with the plaintiff; that substantial damage had already been caused to the plaintiff by this loss of custom during the time it had continued, and that its further continuance would cause plaintiff further substantial loss; that these customers were, by the aforesaid threats of defendants, coerced and compelled, against their wish and will, to cease dealing with plaintiff or using goods obtained from plaintiff; and that the defendants intended and threatened to continue this boycott indefinitely. The claim of the defendants appears to be that these notices were intended for the benefit of the several persons to whom they were sent to warn them of the consequences that might attend their patronizing the plaintiff, so that they could avoid doing so, and thereby escape the evil results that would otherwise come to them, and that the sending of notices for such a purpose is not only lawful and innocent, but praiseworthy as well; that these consequences would not come as the result of any act done with reference to the parties warned, but as the result of conditions that existed under the union rules established long before any difficulty with plaintiff arose. These rules seem to be regarded as of similar force to the law of the land and a notice not to disregard them as a friendly act similar to a notice to a friend not to violate the law. I concede, of course, that, where a strike has been determined upon, the mere sending of a notice of the fact is not unlawful, or blameworthy, and can not be made the foundation of an action. Perhaps the sending of these notices under some circumstances might have been considered as an act of this character. But under the circumstances disclosed in this case, and in view of the findings of the court which show that the acts of the defendants were intended to coerce plaintiff's patrons to cease dealing with plaintiff in order to injure plaintiff in its property rights, the conduct of the defendants must be considered as malicious and unlawful. The defendants had the right, by lawful means to persuade or induce others to cease dealing with plaintiff, although their purpose in so doing was to injure the plaintiff in its business and constrain plaintiff to yield to their demands in regard to the conduct of plaintiff's business. It is only when they seek to accomplish such injury by the use of means which the law deems unlawful that their action to that end becomes unlawful and the resulting injury an actionable wrong. The entire case depends on the question whether or not the means by which the defendants induced the plaintiff's customers to cease dealing with it were unlawful.

It is of no importance that the rules were adopted without special reference to the plaintiff. They were adopted for the express purpose of being put in force against any person when the occasion should arise which made it desirable that the conduct of such person should be influenced or controlled. The effect in contemplation of law is the same as if they had been made expressly for the occasion for which they were used. Nor is the case of plaintiff defeated by the fact that the only act done by the defendants at the time of the boycott was the sending of notices that the plaintiff had been declared unfair without threat of any sort accompanying it. It is in evidence that all the persons thus notified knew of the purport and effect of the union rules which would be applied in such a case. The defendants had created this engine of oppression for use at any time they desired, and had prepared the signal upon which it was to become active. The parties notified were aware of all this, and the defendants also knew that these parties had this knowledge. Further words were unnecessary. The threat would not have been more complete if the notice had expressly stated that all business with Parkinson Company must stop under penalty of a strike of their union workmen. The defendants had arranged this condition of affairs. They can not escape its effects on the ground that they were simply giving information of action which would inevitably take place and were doing it for the benefit of the contractors so that they might act as requested, and thus avoid the damages otherwise ensuing. If the action of which this notice was given had been that of third persons for whom defendants were in nowise responsible, or with whom they were not in collusion, such a claim might stand. But the action of which they were so kindly notifying the contractors was their own action long before resolved upon. If they had no right to act in this manner for this purpose, the fact that it was previously arranged or decided upon for this or any similar occasion, was immaterial.

It is further argued that the only thing with which the customers were threatened was a strike of these customers' employees; that this threat was made by the men themselves, through their agents authorized to act for them; and that they had a lawful right to strike at any time and for any cause or no cause, and hence that their conduct was not unlawful. The principle settled by the cases cited, however, is that, while men have a right to strike, they have no right by that means to coerce their employers so as to compel them to act to the injury of a third person. The fact that they were to strike in such numbers gave them a power over the threatened customers of plaintiff, which constituted undue influence over them, or coercion or intimidation, as most of the authorities usually express it, and this coercion, exercised for the purpose of injuring a third person, is an unlawful act, and makes the resulting injury an unlawful injury, which may be enjoined if only threatened, and which, if committed, may be redressed by an action for damages. It is the control of another's conduct against his will that is the unlawful element in the proposition. This being unlawful, the resulting injury to a third person is unlawful, although every other act in the transaction is lawful in itself. So far as this unlawful element is concerned, it is immaterial whether that control is obtained by fear produced by the immediate prospect of serious pecuniary loss, as the result of a threatened strike, or by fear produced by a threat of bodily injury.

LAWS OF VARIOUS STATES RELATING TO LABOR, ENACTED SINCE JANUARY 1, 1908.

[The Twenty-second Annual Report of this Bureau contains all laws of the various States and Territories and of the United States relating to labor, in force January 1, 1908. Later enactments are reproduced in successive issues of the Bulletin beginning with Bulletin No. 80, the issue of January, 1909. A cumulative index of these later enactments is to be found on page 471 et seq. of this issue.]

LOUISIANA.

ACTS OF 1908.

Act No. 31.—*Interest to be paid on employees' deposits.*

Section 1. All corporations, firms and individuals doing business in this State requiring of its or their employees a cash deposit as a guarantee for the faithful performance of the duties imposed upon such employees, shall pay to such employee in cash interest at the rate of not less than four per cent per annum on the cash sum so deposited.

Approved June 20, 1908.

Act No. 73.—*Inspection of factories, etc.—Doors to open outwardly.*

Section 1. All the doors for ingress and egress to * * * factories with more than twenty employees * * * shall be so swung as to open outwardly from the * * * workshops; but such doors may be hung on double-jointed hinges, so as to open with equal ease outwardly or inwardly.

Sec. 2. The provisions of this act shall apply to all buildings and houses within its terms, erected after its passage, from the date it becomes in force. As to all such buildings and houses heretofore erected, said provisions shall be applied from and after the expiration of six months from the date when this act became operative.

Sec. 3. * * * The owner of any * * * factory, failing to comply with the provisions of this act or to have same complied with as relates * * * to such building or buildings owned by them, shall be guilty of a misdemeanor and upon conviction shall be fined not less than ten dollars nor more than one hundred dollars, and upon failure to pay such fine and costs shall be imprisoned in the parish jail for a period not exceeding (90) ninety days.

Sec. 4. *Provided*, That this act shall not apply to factories, cotton seed oil mills and other like establishments where the doors for the purpose of protection against fire, are so arranged as to slide back and forth on rollers.

Approved June 30, 1908.

Act 155.—*Bureau of labor and industrial statistics.*

Section 1. The governor, shall, by and with the advice and consent of the senate, appoint some suitable person who shall be designated "Commissioner of Labor and Industrial Statistics" with headquarters in such place as the governor shall designate, and who shall hold his office for a term of four (4) years.

Sec. 2. The duties of such commissioner shall be to collect, assort, systematize and present in annual reports to the governor, and to be by him biennially transmitted to the legislature within ten days after the convening thereof every two years, statistical details, relating to all departments of labor in the State, especially in its relations to the commercial, industrial, social, educational and sanitary condition of the laboring people; and to the permanent prosperity of the productive industries of the State, and also inquire into the immediate causes of strikes, lockouts or other disturbances of the relations between employers and employees.

Sec. 3. The commissioner shall have power to take and preserve evidence, examine witnesses under oath, and administer the same, and in the discharge of his duties, may enter any public institution of the State, and at reasonable hours when open for business, any factory, mill, workshop, store or other places where labor may be employed. He shall have power to appoint such deputies as he may deem necessary and all inspectors [inspections], authorized by law, of factories, mills, workshop, store or other places where labor is employed shall be made by said commissioner or his deputies. It shall be the duty of the commissioner and his deputies to enforce all laws regulating or dealing with the employment of labor of any kind, and to prosecute all persons, firms or corporations violating the same. In the city of New Orleans, the mayor, with consent of the council shall appoint a factory inspector who may be either male or female.

SEC. 4. All State, parochial, municipal and town officers, are hereby directed to furnish to said commissioner, upon his request, all statistical information in reference to labor and industries, which may be in their possession as such officers.

SEC. 5. Any person who shall willfully impede or prevent the commissioner or his deputies in the full or free performance of his or their duties, shall be deemed guilty of a misdemeanor and upon conviction of the same shall be fined not less than five (5) dollars nor more than twenty-five (25) dollars or be imprisoned not less than five (5) days nor more than twenty-five (25) days in the parish jail, or both at the discretion of the court.

SEC. 6. The commissioner shall receive a salary of fifteen hundred ($1500.00) dollars per annum, he shall employ a secretary at a salary of one thousand ($1000) dollars per annum and shall be allowed the sum of one thousand ($1000) dollars per annum for all necessary expenses attendant upon the duties of his office, all of which amounts shall be payable monthly out of the general fund, upon the warrant of the said commissioner.

SEC. 9. Nothing in this act shall be construed as relating to sugar industries or sugar mills outside of any city or town in this State.

Approved July 2, 1908.

ACT NO. 178.—*Examination, etc., of electricians.*

SECTION 1. The governor shall within, thirty (30) days after the passage of this act, appoint in each city therein of more than fifty thousand (50,000) inhabitants, a board which shall be known as the Board of Electrical Examiners and Supervisors, consisting of five qualified electors for the purpose of examining into the qualifications and capabilities of master electricians, as defined by section 5 of this act.

The members of the boards so appointed shall be competent practical electricians, and shall be selected as follows: One (1) from nomination made by the oldest established electrical contractors' association of each city, one (1) from nomination made by the commissioner of police and public buildings, one (1) from nomination made by the fire marshal, and one (1) from nomination made by local "International Brotherhood Electrical Workers," inside wiremen, and these four shall select a fifth member from among the local established electrical engineers. A majority of said board shall constitute a quorum to transact the business thereof. Unless removed for cause, the term of office of the members of the first number so appointed shall be as follows: The nominee from the fire marshal one (1) year; nominee from the electrical contractors' association, two (2) years; the nominee of the commissioner of police and public buildings, one (1) year; nominee from the local I. B. E. W., inside wiremen, two (2) years, the fifth member selected shall serve one year. Should any vacancy occur from any cause, during the term of any board as herein provided, the governor shall appoint some one from nominations made as above provided to fill such vacancy, and this in such manner that the various boards shall continue to be constituted as herein provided. The governor shall have full power to remove any member of the board for incompetency or improper conduct upon satisfactory evidence being presented to him of such condition.

SEC. 2. The members of said board shall respectively take and subscribe the oath required of state officers. They shall have the power to elect out of their number, a president, a secretary and a treasurer; to adopt such rules and by-laws for the transaction of the business of the board as they may deem expedient.

SEC. 3. Each member of said board shall receive a compensation of five dollars ($5.00) per day for actual service in attending meetings of the board, which compensation shall be paid out of any moneys in the hands of the treasurer of said board: *Provided*, That the secretary of said board may receive such additional compensation as the board may deem just and reasonable and for which the by-laws of the said board may provide. In no event however shall the compensation of the members of the said boards or of their secretaries be paid out of the funds in the state treasury or become a charge against the State.

SEC. 4. Said boards shall meet at least once each month in their respective domiciles, and shall hold special meetings as frequently as the proper and efficient discharge of their business shall require, and each board shall adopt rules and regulations for the examination of master electricians as herein defined and when so adopted, such rules and regulations shall have the same force and effect as if herein contained; and the rules of said board shall also provide for the giving of timely notice of such meetings to all those who shall have made application for a license as herein provided and said board shall give in writing to the commissioner of police and public buildings a detailed statement of all licenses issued, renewed, or revoked at any meeting of said board. A majority of its members shall organize each of such boards and constitute a quorum for the transaction of its business.

SEC. 5. The term "master electrician" as used in this act shall be so defined as to include any and all persons, firms and corporations engaged in the business of or holding themselves out to the public as engaged in the business of installing, erecting or repairing, or contracting to install, erect or repair electric wires or conductors to be used for the transmission of electric current for electric light, heat or power purposes, or mouldings, ducts, raceways or conduits, together with fittings for same for the reception or protection of such wires and conductors, or to electrically connect electric wires or conductors together, or to any electrical machinery apparatus device fittings or fixtures to be used for electric light, heat or power purposes.

A license of "master electrician" issued or granted under and in accordance with the provisions of this act, shall entitle any such person, firm or corporation so licensed to engage in the business of installing, erecting and repairing, and of contracting to install, erect and repair any electric wires or conductors to be used for the transmission of electric current for electric light, heat or power purposes and any mouldings, ducts, raceways and conduits, together with fittings for same to be used for the reception and protection of such wires and conductors together and to any apparatus, devices, fittings or fixtures to be used for electric light, heat or power purposes.

SEC. 6. Before any person[,] firm or corporation shall hereafter engage in the business of a master electrician as defined in section five (5) of this act, and before any person, firm or corporation now so engaged in said business or any branch or class thereof, shall continue in said business of "master electrician," such person firm or corporation shall apply to said board for a license to practice as "master electrician," and the applicant, if a person, or if a corporation, one of the officers or a representative and agent thereof, to be designated by said corporations; or if a firm, one of the members thereof thall present himself before the said board at a time and place fixed by the said board. If the board shall find upon due examination, that the applicant presenting himself is of good moral character has a satisfactory knowledge of electricity and the natural laws appertaining to and governing the same and of the use and functions of electric wires, appliances and devices for electric light, heat and power purposes and is possessed of skill and knowledge in all matters pertaining to the business of a "master electrician" as defined in section five (5) of this act the said board, upon payment of the fee and upon giving the bond hereinafter provided for, shall issue to the said person, firm or corporation a license as "master electrician" to practice said business for a term of one (1) year, and shall register such person, firm or corporation as duly licensed "master electrician."

Provided, That no license shall be granted to any person under the age of twenty-one (21) years, nor shall any license be granted to any person who has not taken and subscribed an oath that he, or in case of a corporation, one of the principal officers or the representative and agent thereof and, in the case of a firm, one of the members thereof, has had at least three (3) years actual experience as a "master electrician" within the terms of this act or as an electrical workman, in such class or classes of electrical business or work as, in the opinion of the board shall have properly fitted the applicant for a license as "master electrician."

Provided further, That each applicant at the time of filing his, their or its application, shall pay to the secretary of said state board of electrical examiners, the sum of twenty-five dollars ($25.00): *And provided moreover*, That every person, firm or corporation before receiving a license shall make, execute and deliver a bond to the State of Louisiana in the full sum of twenty-five hundred dollars ($2,500.00) with sufficient surety or sureties to be approved and filed with the state board of electrical examiners the bond to save harmless the owner or real party in interest in the property for which any such material is furnished, or service performed, against loss or damage which shall arise by reason of the work done or material furnished being in violation of and below the standard of the current edition of the national electric code; but action can be maintained thereon in the name of such owner or real party in interest only, if commenced within one (1) year from and after the date of the installation of the materials furnished or performance of such work or service.

When, however, the material furnished, or work done, or service performed, shall have been inspected, and a written or printed certificate of approval issued by a legally authorized underwriters' inspector, then the said master electrician shall be considered as having fulfilled the requirements of this act, and his responsibility shall cease under the above bond for materials furnished and work or service performed.

SEC. 7. All persons, firms or corporations, that at the time of the enactment of this act, are engaged in the business which shall be hereafter known as the business of a "master electrician," as described in section five (5) of this act, shall within sixty days after the passage of this act comply with all the provisions of section six (6) of this act, or such persons, firms or corporations shall within sixty (60) days cease to do the work which shall be hereafter known as that of a "master electrician" as described in section five (5) otherwise he, they or it shall be guilty of a misdemeanor and on conviction suffer the fines and penalties as set forth in section fourteen (14) of this act.

SEC. 8. Each and every license issued under the provisions of this act shall be signed by the president and secretary of the board and attested with its seal, and said license so signed and attested, for the period of one year, shall be evidence in any court in the State of the business for which the license is issued. All licenses and renewals of same shall expire on the first day of January of each year.

SEC. 9. No person, firm or corporation granted a license under the provisions of this act, shall continue in the business of installing or repairing electrical wires, conductors or apparatus for electric light, heat or power purposes, after the expiration of the said license, unless the said license or extension of same shall have been renewed as hereinafter provided.

Upon the payment of a fee of ten ($10) dollars any person, firm or corporation granted a license under the provisions of this act (unless the said license shall have been revoked as hereinafter enacted), shall be granted a renewal of said license without examination of the applicant, if application therefor is made either in person or in writing to the said board by the holder of such license within the three months preceding the expiration of such license upon payment of a fee of ten dollars ($10.00) and the said renewal of said license shall be made for a period of one (1) year, and shall be signed and attested as required for such original license and any such renewal of such license so signed and attested shall have the same weight as evidence in any court of this State as is hereinbefore accorded said original license.

Provided, also, That further, one year renewals shall be granted in like manner upon expiration of any renewal of license upon making application and paying a like fee within three months preceding the expiration of such renewal, in the same manner as provided for the first renewal.

SEC. 10. After a full hearing of all parties in interest said board shall have power to revoke for proper cause any license or renewal of same, granted by the said board.

SEC. 11. Each and every license and renewal of same shall be in force and effect only so long, as an approved bond, filed with the said board in accordance with the provisions of section six (6) of this act shall remain in force and every such license or renewal of same shall become void by the termination of said bond regardless of the regular date of expiration of the said certificate, license or renewal.

SEC. 12. Any and all persons, firms or corporations granted a license or renewal thereof, in accordance with the provisions of this act shall display the same in a conspicuous place in the office or place of business of the person, firm or corporation to which it was issued.

SEC. 13. Nothing in this act shall be so construed as to prevent any person from doing or performing any of the kinds of work enumerated in section five (5) of this act when such work is performed under the direction and supervision of a duly licensed master electrician, but no work, other than minor electric repairs for the maintenance of established plants, shall be performed excepting under such direction and supervision of a duly licensed master electrician, and the said licensed master electrician shall be responsible for any and all work so done under his direction and supervision. This shall be construed as exempting lighting companies and electric railway companies and the department of police and public buildings of the city of New Orleans from the provisions of this act in so far as the maintenance and installation of their equipment pole-line services and meters are concerned.

SEC. 14. Any person, firm or corporation or any member of such firm or corporation, who shall practice or engage, or continue in the work of a master electrician as defined in section five (5) of this act without having complied with all the provisions of this act, and any person not licensed as a master electrician who shall do or perform any such work except under the direction of a master electrician, or who shall violate any of the provisions of this act, shall be guilty of a misdemeanor and upon conviction thereof, shall be sentenced to pay a fine of not less than twenty-five dollars ($25.00), nor more than five hundred dollars ($500.00), or to an imprisonment not exceeding ninety (90) days, or both, in the discretion of the court.

SEC. 15. No license, or renewal of same, granted or issued under the provisions of this act, shall be assignable, or transferrable, and every such license and renewal of same shall specify the name of the person, firm or corporation to whom it is issued, and in the case of a firm, the member of said firm, and in the case of a corporation, the principal officer or the designated representative of the said corporation through whom the application for the said license was made.

SEC. 16. All fees collected under the provisions of this act, shall be for the use of said board to defray its necessary expenses.

SEC. 17. It shall be the duty of the said board before the first Monday of January of each and every year, to make a report in writing to the governor of the State, containing a detailed statement of the nature of receipts and the manner of expenditure, and any balance of money remaining at the end of the year, after payment of expenses, including per diem of members of board and other necessary expenses, incurred by them in the discharge of their duties, shall be deposited in the state treasury.

Approved July 3, 1908.

ACT NO. 184.—*Public printing to be done by a citizen of the State.*

SECTION 1. * * * Such contract or contracts [for public printing] shall not be awarded to any but a citizen of this State; * * *

Approved July 6, 1908.

ACT NO. 228.—*Company stores—Redemption of orders.*

SECTION 1. Any person, firm or corporation issuing checks, punchouts, tickets, tokens, or other device, redeemable either wholly or partially in goods or merchandise at their, or any other place of business, shall, on demand of any legal holder thereof, on the next pay day of such person, firm or corporation issuing same succeeding the date of issuance of same be liable for the full face value thereof, in current money of the United States.

SEC. 2. Any such checks punchouts, tickets, tokens, or other device, issued by any person, firm or corporation, shall be considered and treated as payable to bearer, on demand, in current money of the United States, notwithstanding any contrary stipulation or provision which may be therein contained.

SEC. 3. In case of failure of any person, firm or corporation to pay any legal holder of any such checks, punchouts, tickets, or other device, issued by them, the full face value thereof, in current money of the United States, when so demanded, such holder may immediately bring suit thereon in any court of competent jurisdiction, and, in addition to recovering the full face value thereof, with legal interest from demand, may recover ten per cent of said amount as attorney's fees recoverable in the same suit.

Approved July 8, 1908.

ACT NO. 264.—*Protection of employees on buildings.*

SECTION 1. For the safety of persons in and about the construction, repairing, alteration or removal of buildings, bridges, viaducts and other structures, all scaffolds, hoists, cranes, stays, ladders, supports or other mechanical contrivances erected or constructed by any person firm or corporation in this State for use in the erection, repairing, alteration, removing or painting of any house, building, bridge, viaduct, or other structure in cities of more than thirty thousand inhabitants, shall be erected and constructed, placed and operated so as to give proper and adequate protection to the life and limb of any person or persons employed or engaged thereon, or passing under or by the same, and in such manner as to prevent the falling of any material that may be used or deposited thereon.

SEC. 2. In the construction or repairing, alteration or removal of any structures, that scaffolding or staging, swung or suspended from any overhead support, more than twenty feet from the ground or floor shall have, where practicable, a safety rail properly bolted, secured and braced and rising at least thirty-four (34) inches above the floor or main portion of such scaffolding or staging and extending along the entire length outside and ends thereof, and properly attached thereto and such scaffolding or staging shall be so fastened as to prevent the same from swaying from the building or structure.

SEC. 3. In any house, building or structure in process of erection or construction, where the distance between the inclosing walls is more than twenty-four feet in the clear, there shall be built, kept and maintained proper intermediate supports for the joists, which supports shall be either brick walls or iron or steel columns, beams, trusses or girders of wood, or other material of sufficient strength, and the floor in all such houses, buildings or structures in process of erection or construction shall be designed, and constructed in such a manner as to be capable of bearing in all their parts in addition to the weight of the floor construction, partitions and permanent fixtures and mechanisms that may be set upon the same, a live load of twenty-five (25) pounds for every square foot of surface in such floor, and it is hereby made the duty of every owner, builder, lessee, contractor or sub-contractor of such house, building or construction or the superintendent or agent of either to see that all the provisions of this section are complied with.

SEC. 4. It shall be the duty of every owner of every house, building or structure (except buildings exclusively for residential purpose), now under construction or hereafter to be constructed, to affix and display conspicuously on each floor of such building during construction, a placard stating the load per square foot of the floor surface, which may with safety be applied to that particular floor during such construction, or if the strength of different parts of the floor varies, then there shall be such placards for each varying part of such floor.

It shall be unlawful to load any such floors or any part thereof to a greater extent than the load indicated on such placard and all such placards shall be verified and approved by the city engineer or inspector of buildings or other proper authority of the city charged with the enforcement of building laws.

SEC. 5. Whenever it shall come to the notice of the building inspector in any city in this State of more than thirty thousand inhabitants charged with the duty of enforcing the building laws, that the scaffolding, stays, hangers, blocks, pulleys, sling braces, ladders, irons, or ropes of any swinging or stationary scaffolding, platform or other similar device, used in the construction repairing alteration removing, cleaning or painting of buildings, bridges or viaducts within said cities are unsafe or liable to prove dangerous to the life or limb of any person, such local authorities shall immediately cause an inspection to be made of such scaffolding, platform or device or the slings, hangers, blocks, pulleys, stays, braces, ladders, iron or other parts connected therewith, and if after an examination, such scaffolding, platform or other device or any parts thereof is found to be dangerous to the life and limb of any person, the said local authorities shall at once notify the person, responsible for the maintenance of such fact and warn him against the use, maintenance of [or] operation thereof and prohibit the use thereof and require the same to be altered and reconstructed, so as to avoid such danger.

Such notice may be served personally upon the one responsible for its erection or by conspicuously affixing it to the scaffolding, platform or other device, or the part thereof declared to be unsafe, after such notice has been served or affixed the person responsible therefor shall cease using and immediately remove such scaffolding, platform or other device or part thereof or alter or strengthen it in such manner as to render it safe. The officer or such local authority whose duty it is to examine or test any scaffolding, platform or similar device or part thereof required to be erected and maintained, by this section, shall have free access at all times during, reasonable hours to any buildings or structures or premises containing such scaffolding, platform or other similar device or parts thereof or where they may be in use. All swinging or stationary scaffolding, platform or other similar devices shall be so constructed as to bear four times the maximum weight required to be dependent thereon or placed thereon when in use and such swinging scaffolding, platform or other similar devices shall not be so loaded or crowded as to render them unsafe or dangerous.

SEC. 6. Any person, firm, or corporation in this State, hiring, employing or directing another to perform labor of any kind in erecting, repairing, altering or painting any water pipe, stand pipe, smoke stack, chimney, tower, steeple, pole, staff, dome, or cupalo [cupola], with the use of any scaffold, staging, swing hammock, support, temporary platform, or other similar contrivance, for such labor, shall keep and maintain at all times while such labor is being performed and such mechanical device in use or operation a safe and proper scaffold, stay, support, or other suitable device, not less than sixteen feet below such working scaffold, staging, swaying hammock, support or temporary platform when such work is being performed at a height of thirty-two (32) feet or more, for the purpose of protecting the person or persons performing such labor from falling in case of any accident to such working scaffold, staging, swaying hammock support or temporary platform.

SEC. 7. All contractors and owners when constructing buildings where the plans and specifications require the floors to be arched between the beams thereof or where the floors or filling in between the floors are fireproof material or brick work shall complete the flooring or filling in as the building progresses to not less than within three tiers or beams below and on which the iron work is being erected. If the plans and specifications of such building do not require the filling in between the beams of the floors with brick or fireproof material, said contractor or owner shall lay in the underflooring thereof or a safe temporary floor on each story as the building progresses to not less than within two stories of the floor below the one to which said building has been erected and where double floors are not to be used, such owners or contractors shall keep planks over the floor to two stories of the floor below the story where the work is being performed, and if the floor beams are not of iron or steel, the contractor for the iron or steel work in the course of construction or the owner of such building shall thoroughly plank over the entire tier of iron or steel beams on which the structural iron or steel work is being erected, except such spaces as may be reasonably required for the proper construction of such iron or steel work, and for the raising and lowering of material to be used in the construction of such building.

Sec. 8. If elevating machines or hoisting apparatus are used within a building in the course of construction for the purpose of lifting material, the contractor or owner shall cause the shafts or openings in each floor to be inclosed or fenced in on all sides by substantial barrier or railing at least four feet in height: *Provided*, Any hoisting machine or engine used in such building construction shall, where practicable, be set up or placed on the ground and where it is necessary to place such hoisting machines or engines on the same floor above the ground floor, such machines or engines must be properly and securely supported with a foundation capable of sustaining twice the weight of such machine or engine, and if the building in course of construction is five stories or more in height, no material needed for such construction, shall be hoisted or lifted over any public street or alley, unless, such street or alley shall be barricaded from use by the public or so covered as to prevent injury to pedestrians.

Sec. 9. If elevating machines or hoisting apparatus operated or controlled by other than hand power, be used in the construction, alteration or removal of any building or other structures, a complete adequate system of communication by means of signals shall be provided and maintained by the owner, contractor or subcontractor during the use and operation of such elevating machines or hoisting apparatus in order that prompt and perfect communication may be had at all times between the operator of the engine or motive power of such elevating machine and hoisting apparatus and the employees or persons engaged thereon or in using or operating the same, and the officers of any city charged with the enforcement of the building law are hereby charged with the enforcement of this provision of this act and in case of their failure so to do, the police authorities shall pursuant to the terms of this act enforce the provisions thereof.

Sec. 10. Any contractor, subcontractor, foreman or other person having charge of the erection, construction, repairing, alteration, removal or painting of any building, viaduct, bridge, or other construction within the provisions of this act violating any of the provisions hereof, upon conviction thereof shall be subject to a fine of not less than twenty-five dollars ($25.00) or more than five hundred dollars or imprisonment for not less than three months or more than two years or both fine and imprisonment in discretion of the court.

Approved July 9, 1908.

Act No. 271.—*Public works—Citizens to be preferred in employment.*

Section 1. Every contractor, superintendent or duly authorized agent engaged in the construction of any state or public building or public works for the State of Louisiana, in cities whose population exceeds ten thousand (10,000) shall employ only mechanics who are citizens of the State and who have paid their poll tax for the current or next preceding year prior to engaging in the work.

Sec. 2. In the event mechanics, where such works or buildings are being constructed, are not available, then such contractor, superintendent or duly authorized agent, shall notify the mayor of the city wherein the work is being done, of such fact, and unless the mayor of said city shall forthwith supply such contractor, superintendent or duly authorized agent with the mechanics needed, said contractor, superintendent or duly authorized agent, shall be authorized to employ mechanics who are not citizens of the State of Louisiana, to make up the deficiency: *Provided*, That nothing herein shall be construed to prevent the State of Louisiana or any parochial or municipal corporation from placing or letting any contract for the erection or construction of any public building or public work, in the open market, and soliciting bids from persons or corporations without the State of Louisiana.

Sec. 3. Any contractor, superintendent or duly authorized agent violating any of the provisions of this act, shall be liable, after conviction before a court of competent jurisdiction, to a fine of not more than one hundred dollars ($100.00) or imprisonment of not more than sixty (60) days, or both at the discretion of the court.

Approved July 9, 1908.

ACT No. 297.—*Railway companies—Cars, etc., to be repaired within the State.*

SECTION 1. All railway or railroad corporations operating in the State of Louisiana, and having their repair shops within the State, as a condition precedent to exercising the right of eminent domain under the laws of the State of Louisiana, the railway or railroad corporations so operating within the State of Louisiana, shall and are hereby required to repair, renovate or rebuild in the State of Louisiana any and all defective or broken cars, coaches, locomotives or other equipment, owned or leased by said corporations in the State of Louisiana, when such rolling stock is within the State of Louisiana: *Provided*, Such railway shall have or be under obligations to have proper facilities in the State to do such work: *And provided*, This act shall not be so construed as to require any railway company to violate the safety appliance law of Congress: *And provided further*, That no railway company shall be required to haul such disabled equipment a greater distance for repairs at a point in Louisiana than would be necessary to reach repair shops in another State.

SEC. 2. All railroad corporations operating in the State of Louisiana, and having their repair shops within the State, shall be prohibited from sending or removing any of their cars, coaches, locomotives or other equipment out of the State of Louisiana to be repaired, renovated or rebuilt, when the same is in a defective or broken condition and within the State.

SEC. 3. Any corporation, lessee, receiver, superintendent or agent; who shall violate any of the provisions of this act, shall after conviction by a court of competent jurisdiction, be liable to a fine of not less than fifty dollars, or more than two hundred dollars, or be imprisoned for not more than three months or both at the discretion of the court.

Approved July 9, 1908.

ACT No. 301.—*Inspection of factories, etc.—Employment of women and children.*

SECTION 1. From and after the passage of this act it shall be unlawful for any person, agent, firm, company, copartnership, or corporation to require or permit or suffer or employ any child under the age of 14 years to labor or work in any mill, factory, mine, packing house, manufacturing establishment, workshop, laundry, millinery or dressmaking store or mercantile establishment in which more than five persons are employed, or in any theater, concert hall, or in or about any place of amusement where intoxicating liquors are made or sold, or in any bowling-alley, boot-blacking establishment, freight or passenger elevator, or in the transmission or distribution of messages, either telegraph or telephone, or any other messages, or merchandise, or in any other occupation not herein enumerated which may be deemed unhealthful or dangerous. The provisions of this section shall in no way be construed as applying to agricultural or domestic industries. Any violation of this provision shall be punishable by a fine of not less than $25 or more than $50 or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days or more than six months, or both, in the discretion of the court.

SEC. 2. The state factory inspector or any factory inspector appointed by the mayor of the city of New Orleans with the consent of the council acting in conjunction with the board of health and school board in the parish shall have full power to issue an age certificate to minors over 14 years and under 16 years of age seeking employment in any part of this State: *Provided, however*, That no person authorized to issue an age certificate as hereafter provided shall have authority to approve such certificate for any child then in or about to enter his own establishment, or the employment of a firm or corporation of which he is a member, officer or employee.

The person approving these age certificates shall have authority to administer the oath provided therein, but no fee shall be charged therefor. Every person issuing or approving these age certificates shall keep a record of the same, and shall forward to the office of the state factory inspector a duplicate of each certificate issued or approved. All such age certificates shall be subject to review by the state or other factory inspector, and may by him or her be canceled if he or she finds that such certificates have been obtained through fraud, misrepresentation or falsification of facts, and whoever shall obtain or assist in obtaining such age certificates by fraud, misrepresentation or falsification of facts, is hereby declared to be guilty of a misdemeanor, and on conviction before a court of competent jurisdiction shall be fined not less than $10 or more than $50. In such cases the factory inspector shall give written notice to the employer, who shall at once cause the minor affected to be dismissed from employment. Printed forms of the age certificates hereinafter provided shall be furnished by the state factory inspector upon request made by persons authorized to issue them. An age certificate shall not be approved unless satisfactory evidence is furnished by a certificate of birth or baptism of such child, the register of birth of such child with an officer of a city or town designated to keep a register of births, or by the records of the public or parochial school attended by such child, that such child is of the age stated in the certificate, or by a certified copy of their passport from the commissioner of immigration: *Provided*, That in cases where the above proof is not obtainable, the parent, guardian or custodian of the child shall make an oath before the state factory inspector, or any factory inspector, or before a juvenile or district court as to the age of such child, and the state factory inspector, or any factory inspector, or the court, may issue to such child an age certificate as sworn to. A duplicate of such age certificate shall be filled out and shall be forwarded to the office of the state factory inspector. The age certificate shall be printed and shall be filled out, signed and held or surrendered in the following forms:

AGE CERTIFICATES.

This certifies that I am (father, mother, guardian or custodian) of (name of minor) and that (he or she) was born at (name of town or city) in the (name of county if known) and (State or county of ——) on the (date of birth and year of birth) and is now (number of years and months) old.

(Signature of parent, guardian or custodian.)

(City or town and date.)

There personally appeared before me the above-named (name of person signing) and made oath that the foregoing certificate by (him or her) signed, is true to the best of (his or her) knowledge. I hereby approve the foregoing certificate of (name of child), height, (feet and inches,) weight ——, complexion (fair or dark), hair (color), having no sufficient reason to doubt that (he or she) is of the age therein certified.

Owner of certificate. This certificate belongs to (name of child and in whose behalf it is drawn), and is to be surrendered to (him or her) whenever (he or she) leaves the service of the corporation or employer holding the same, but if not claimed by said child within thirty days from such time, it shall be returned to the office of the state factory inspector for cancelation.

(Signature of person authorized to approve and sign with official character of authority.)

(Town or city and date.)

Such certificate shall be issued without charge. The provisions of this section shall not become operative until 60 days after the promulgation of this act.

Sec. 3. It shall be the duty of the commissioner of labor and industrial statistics and his deputies, and such factory inspectors as will be appointed in incorporated cities and towns by the mayor, with the consent of the council, and in parishes, by the police jury, and they are hereby authorized and empowered to visit and inspect, at all reasonable times and as often as possible all places enumerated in section 1 of this act, and to file complaint in any court of competent jurisdiction to enforce the provisions of this act, and it shall be the duty of the parish or district attorney to appear and prosecute all complaints so filed.

Sec. 4. No child or person under the age of 18 years, and no woman shall be employed in any of the places and industries enumerated in section 1 of this act for a longer period than ten hours per day of [or] 60 hours per week. There shall be one hour allowed each day for dinner, but such dinner time shall not be included as part of the working hours of the day. In case two-thirds of the employees so desire, time for dinner may be reduced at their request to not less than 30 minutes: *Provided*, That this shall not apply to persons working in stores and mercantile establishments on Saturday nights or 20 days before Christmas. Any violation of this provision shall be punishable by a fine of not less than $25 or more than $50, or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days or more than six months, or both, in the discretion of the court.

No boy under the age of 16 years and no girl under the age of 18 shall be employed at any work before the hour of 6 in the morning or after the hour of 7 at night: *Provided*, That this shall not apply to persons working in stores and mercantile establishments on Saturday nights or during 20 days before Christmas. Any violation of this provision shall be punishable by a fine of not less than $25 nor more than $100, or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than six months, or both, in the discretion of the court.

Sec. 6. Every person, firm or corporation, agent or manager of a corporation employing or permitting or suffering to work five or more children under the age of 18 years and over the age of 14 in all places of business or establishments or occupations enumerated in section 1 shall post and keep posted in a conspicuous place in every room in which such help is employed or permitted or suffered to work a list containing the names, age and place of residence of every person under the age of 18 years employed, permitted or suffered to work in such room, and it shall be unlawful for any person, agent, firm, company, copartnership, corporation or manager of a corporation to require or permit or suffer or employ in any mill, factory, mine or packing house, manufacturing establishment, workshop, store, laundry, millinery, dressmaking or mercantile establishment in which more than five persons are employed, or any theater, concert hall or in or about any place of amusement where intoxicating liquors are made or sold, or in any bowling-alley or boot-blacking establishment, or in any place where messages are transmitted or distributed, or in any other occupation not herein enumerated which may be deemed unhealthful or dangerous, any child over the age of 14 until an age certificate, approved as hereinabove provided, has been produced and placed on file in any such establishment or place of employment as heretofore mentioned in this section: *Provided, further, however*, That immediately upon the employment of any child in any of the places enumerated in this act the manager, superintendent, owner or agent shall notify in writing, the factory inspector of the employment of said child in the event proper age certificate is not filed, but such establishment or place of employment must procure from said child within five days from employment the age certificate provided for in this act. Any violation of this section shall be punishable by a fine of not less than $25 nor more than $50 or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than six months, or both in the discretion of the court.

SEC. 7. Any parent or guardian or person or persons having control of or being responsible for the care of any child or person under the age of 16 who shall sign or swear or in any manner make false statement as to the age of said child or person under the age of 16 for the purpose of obtaining employment for said child or young person shall be deemed guilty of an offense for each violation thereof and upon conviction for the same shall be punished by a fine of not less than $10 nor more than $25 or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 8. Any child working in or in connection with any of the aforesaid establishments or in the distribution or transmission of merchandise or messages who appears to the inspector to be under the legal age is required to procure from the city or parish physician a certificate as to the physical fitness of said child to perform the work or service he or she is required to do.

SEC. 9. The presence of any child under 14 years of age in any of the establishments enumerated in section 1, except during the dinner hour, shall constitute prima facie evidence of his or her employment therein.

SEC. 10. Any owner, manager, supervisor or employee in any of the aforesaid occupations who shall hide or assist to escape or give warning of the approach of the inspector to any child or young person or woman in said establishments shall be deemed guilty of a misdemeanor and shall be punished by a fine of not less than $5 nor more than $15 or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 11. Any person, owner, agent, firm, manager, copartnership or company in charge of any establishment at the time of inspection shall be required to furnish the inspector a true statement of the number of persons employed in such establishment and any person, owner, agent, superintendent, firm, manager, company or copartnership who shall fail or refuse to furnish such statement or willfully understate the number of persons employed shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than $25 nor more than $100 for each offense or imprisonment for not less than ten nor more than thirty days in the parish jail (parish prison in New Orleans), or both in the discretion of the court.

SEC. 12. Within one month after the occupancy of any factory, workshop or mill or store or other aforesaid occupation or establishment where children, young persons or women are employed the occupant shall notify the inspector in writing of such occupancy. Failure to do this shall constitute a misdemeanor and shall be punishable by a fine of not less than $10 nor more than $25 or by imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 13. Every person who shall employ any female in any factory, mill, warehouse, manufacturing establishment, workshop or store or any other occupation or establishment hereinabove mentioned shall provide suitable seats, chairs or benches for the use of the females so employed, which shall be so placed as to be accessible to said employees and shall permit the use of such seats, chairs or benches by them when they are not necessarily engaged in the active duties for which they are employed, and there shall be provided at least one chair to every three females. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than

$50 or imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 14. Every factory, mill, manufacturing establishment, workshop, warehouse, mercantile establishment or store and all other occupations and establishments hereinabove mentioned in which five or more young persons or women are employed and every such institution in which two or more children young persons or women are employed shall be supplied with proper wash and dressing rooms and kept in a cleanly state and free from effluvia arising from any drain, privy or other nuisance and shall be provided, within reasonable access, with a sufficient number of proper water closets or privies for the reasonable use of the persons employed and at least one of such closets shall be provided for each twenty-five persons employed and wherever two or more persons and one or more female person[s] are employed as aforesaid a sufficient number of separate and distinct water closets, earth closets or privies shall be provided for the use of each sex and plainly so designated, and no person shall be allowed to use any such closet or privy assigned to persons of the other sex, and said closets or privies shall not be locked during working hours. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than $50 or imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 15. Stairways with substantial hand rails shall be provided in factories, mills and manufacturing establishments for the better safety of persons employed in said establishments. The doors of such establishments shall swing outwardly or slide, as ordered by the factory inspector and it shall be neither locked, bolted or fastened during working hours. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than $50 or imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 16. Every factory, mill or workshop in this State where women and children are employed shall be lime-washed or painted when deemed necessary and ordered by the health authorities. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than $50 or imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than thirty days or both, in the discretion of the court.

SEC. 17. No minor or woman shall be required to clean any part of the mill, gearing or machinery in any such establishment in this State while the same is in motion. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than $50 or imprisonment in the parish jail (parish prison in New Orleans), for not less than ten days nor more than thirty days, or both, in the discretion of the court.

SEC. 18. The opening of all hatchways, elevators and well-holes upon every floor of every manufacturing, mechanical or mercantile or public buildings where women or children are employed in this State shall be protected by good and sufficient trap doors of self-closing hatches or safety catches or good strong guard rails at least three feet high. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than $50 or imprisonment in the parish jail (parish prison in New Orleans), for not less than ten days nor more than thirty days or both, in the discretion of the court.

SEC. 19. In all establishments in this State wherein children, young persons or women are employed where any process is carried on by which dust, or smoke or lint is generated the inspector shall have the power and authority to order that a fan, or fans, or some other dust, or smoke or lint removing or consuming contrivance or contrivances be so placed as to prevent the inhalation of such dust or smoke or lint by the employees: *Provided*, That two mechanical engineers, one chosen by the inspector and the other by the owner or owners of the establishment, shall agree as to the necessity of such fan or fans or other dust or smoke or lint removing or consuming contrivance or contrivances. Upon the failure of said two mechanical engineers to agree, a third mechanical engineer shall be chosen to arbitrate. Failure to comply with this section shall be punishable by a fine of not less than $25 nor more than $50 or imprisonment in the parish jail (parish prison in New Orleans) for not less than ten days nor more than six months or both, in the discretion of the court.

SEC. 20. All accidents in manufacturing, mechanical or other establishments or places within this State where children, young persons or women are employed which prevent the injured person or persons from returning to work within two weeks after the injury or which result in death shall be reported semi-annually by the person in charge of such establishment or place to the inspector. Failure to do this shall be deemed a violation of this section and punishable by a fine of not less than $5 nor more than $10 or imprisonment in the parish jail (parish prison in New Orleans) for not less than twenty-four hours nor more than ten days, or both, in the discretion of the court.

SEC. 21. It shall be the duty of the city or town or parish employing an inspector or inspectors to provide a suitable office for same and pay for all necessary expenses incurred in the discharge of the duties of said office.

SEC. 22. There shall be an annual report of inspections made and all work and expenses in connection with said office forwarded to the commissioner of labor and incorporated towns and cities to the mayor and council of the cities and towns employing said inspector or inspectors.

SEC. 23. In the city of New Orleans, with the consent of the council, [the mayor] shall appoint a factory inspector, who may be either male or female, to see that the regulations of this act are observed and also to prosecute all persons who shall violate the same. Such inspector shall be paid a salary of not more than $750 per annum.

SEC. 24. All fines collected through this act shall be paid over to the school fund in the parish where the fines are collected.

Approved July 9, 1908.

MASSACHUSETTS.

ACTS OF 1908.

CHAPTER 217.—*Employment of labor—False advertisements.*

SECTION 1. It shall be unlawful knowingly to cause to be printed or published a false or fraudulent notice or advertisement for help or for obtaining work or employment.

SEC. 2. Whoever violates the provisions of this act shall be punished by a fine of not more than five hundred dollars or by imprisonment for not more than three months, or by both such fine and imprisonment.

Approved March 14, 1908.

CHAPTER 273.—*Sunday labor.*

SECTION 1. Section three of chapter ninety-eight of the Revised Laws, as amended by chapter four hundred and fourteen of the acts of the year nineteen hundred and two, and by chapter one hundred and twenty-six of the acts of the year nineteen hundred and eight, is hereby further amended * * *

Approved March 25, 1908.

[Chapter 126 permits the digging of clams and the icing and dressing of fish on Sunday, and chapter 273 permits the performance on Sunday of unpaid work on yachts and pleasure boats.]

CHAPTER 306.—*Free public employment offices—Weekly bulletins.*

SECTION 1. The chief of the bureau of statistics of labor is hereby authorized to furnish weekly to the clerks of all cities and towns in the Commonwealth printed bulletins showing the demand for employment, classified by occupations to such extent as may be feasible, and indicating the city or town in which the employees are wanted, such information to be based upon the applications for employees made at the free employment offices under the jurisdiction of said bureau.

SEC. 2. It shall be the duty of every city and town clerk to post the lists received as aforesaid, in one or more conspicuous places in the city or town.

SEC. 3. A city or town clerk who fails to comply with the provisions of this act shall be punished by a fine not exceeding ten dollars.

Approved March 27, 1908.

CHAPTER 325.—*Inspection of factories, etc.—Pure water for humidifying.*

SECTION 1. The water used for humidifying purposes by any person, firm or corporation operating a factory or workshop, shall be of such a degree of purity as not to give rise to any impure or foul odors, and shall be so used as not to be injurious to the health of persons employed in such factories or workshops.

Sec. 2. Any person, firm or corporation violating any provision of this act shall, upon conviction thereof, be punished by a fine of not less than ten nor more than one thousand dollars.

Sec. 3. The state inspectors of health shall, under the direction of the state board of health, enforce the provisions of this act.

Approved March 31, 1908.

Chapter 343.—*Sunday labor.*

Section 1. The provisions of section two of chapter ninety-eight of the Revised Laws, as amended by section two of chapter four hundred and sixty of the acts of the year nineteen hundred and four [prohibiting Sunday labor] shall not apply to the delivery of ice cream on the Lord's day.

Approved April 3, 1908.

Chapter 375.—*Factory inspectors—Age of eligibility.*

Section 1. A person who is not above the age of fifty years, if otherwise qualified, shall be eligible for appointment as an inspector of factories and public buildings, as a member of the inspection department of the district police.

Approved April 8, 1908.

Chapter 380.—*Actions for injuries—Special inspection of plant.*

Section 1. Any justice of the superior court may, upon petition setting forth in ordinary language that the servant or employee of a certain firm, person, corporation or association has been injured in the course of his employment, through some defect in the ways, works or machinery owned or used by the employer, and that it is necessary in order to protect the interests of the injured person that an examination of the ways, works or machinery through whose defect the injury occurred should be made, grant an order directing the employer or person in control of such ways, works or machinery to permit the person named in said order to make such examination, under such conditions as shall be set forth in the order; but the order shall not be granted until after such notice to the employer as any justice of said court may direct or approve, and a hearing.

Approved April 10, 1908.

Chapter 389.—*Inspectors of factories, etc.—Powers and duties.*

Section 1. The chief of the district police, the deputy chief of the inspection department of the district police, and the inspectors of factories and public buildings may, in the performance of their duty in enforcing the laws of the Commonwealth, enter any building, structure or inclosure, or any part thereof, and examine the methods of prevention of fire, means of exit, and means of protection against accident, and may make investigations as to the employment of children, young persons and women, except concerning health and the influence of occupation upon health. They may, except in the city of Boston, enter any public building, public or private institution, schoolhouse, church, theatre, public hall, place of assemblage, or place of public resort, and make such investigations and order such structural or other changes, in said buildings, as are necessary relative to the construction, occupation and heating appliances and conditions, except for ventilating and sanitary purposes: *Provided, however*, That they may order structural changes for any purpose whenever the necessity therefor has been reported in accordance with the provisions of section five of chapter five hundred and thirty-seven of the acts of the year nineteen hundred and seven.

Sec. 2. Any person who hinders or prevents or attempts to prevent any member of the inspection department of the district police from entering any building, structure or inclosure or part thereof specified in the preceding section shall be liable to a penalty of not less than fifty nor more than one hundred dollars.

Sec. 3. Trial justices, police, municipal and district courts shall have concurrent jurisdiction with the superior court to enforce the provisions of this act.

Approved April 11, 1908.

CHAPTER 420.—*Liability of railway companies for injuries to employees.*

SECTION 1. Section seventy-one of chapter one hundred and six of the Revised Laws is hereby amended * * *

Approved April 21, 1908.

[The section named is amended by extending its application to elevated trains, elevated railways, and elevated railway corporations.]

CHAPTER 457.—*Liability of employers for injuries to employees—Actions.*

SECTION 1. Section seventy-three of chapter one hundred and six of the Revised Laws is hereby amended * * * so as to read as follows:

Section 73. If, as the result of the negligence of an employer himself, or of a person for whose negligence an employer is liable under the provisions of section seventy-one, an employee is instantly killed, or dies without conscious suffering, his widow or, if he leaves no widow, his next of kin, who, at the time of his death, were dependent upon his wages for support, shall have a right of action for damages against the employer. If an action is brought under the provisions of this section by the widow of the employee, or by the next of kin, who may have such right of action, or if the action is brought under the provisions of section seventy-one by the legal representatives, such action shall not fail by reason of the fact that it should have been brought under the other section, but may be amended so as to provide against such failure at any time prior to final judgment.

Approved April 28, 1908.

CHAPTER 462.—*Bureau of labor.*

SECTION 1. Chapter one hundred and seven of the Revised Laws is hereby amended by striking out section two and inserting in place thereof the following:

Section 2. It shall be the duty of the bureau to collect, assort, arrange, and issue from time to time reports embodying statistical information relative to the commercial, industrial, social, educational, and sanitary condition of the people, and to the permanent prosperity of the productive industries of the Commonwealth. It may also distribute at such regular intervals as it deems advisable a bulletin in relation to industrial or social matters. It may send for persons and papers, and examine witnesses under oath; and such witnesses shall be summoned in the same manner and be paid the same fees as witnesses before the superior court.

SEC. 2. The chief of the bureau of statistics of labor shall annually, on or before the third Wednesday in January, make a report to the general court summarizing the work of the bureau during the preceding year, and shall make therein such recommendations as he may deem proper. To this report there shall be appended a report or reports embodying such statistical and other information regarding labor as may be gathered by the bureau for annual presentation. These reports may be issued separately in parts in the discretion of the chief of the bureau and shall, when bound together, constitute the annual report of the chief of the bureau of statistics of labor.

SEC. 5. The chief of the said bureau shall annually, on or before the third Wednesday in January, make a report to the general court covering the work of the free employment offices, established in accordance with chapter four hundred and thirty-five of the acts of the year nineteen hundred and six. The secretary of the Commonwealth shall cause to be printed of said report, three thousand two hundred and fifty copies, of which two thousand two hundred and fifty shall be for the use of the bureau.

Approved April 28, 1908.

CHAPTER 485.—*Free public employment offices.*

SECTION 1. Chapter four hundred and thirty-five of the acts of the year nineteen hundred and six is hereby amended by striking out section two and inserting in place thereof the following: Section 2. The chief of said bureau shall appoint for each of the offices provided for in section one of this act a superintendent to discharge under his direction the duties hereinafter set forth or such as may be required by him. The said chief may also appoint an assistant superintendent and such clerks as he may deem necessary for the proper conduct of the business of said employment offices. The furniture and fixtures of said employment offices shall be provided by the sergeant-at-arms in the manner and under the restrictions specified in section four of chapter ten of the Revised Laws for buildings or parts of buildings leased to the Commonwealth. The situation of each office established under the provisions of this act shall be plainly indicated by a proper sign or signs.

SEC. 2. Said chapter is hereby further amended by striking out section three and inserting in place thereof the following: Section 3. It shall be the duty of the superintendents of the employment offices established in accordance with this act, to receive applications from those seeking employment and from those desiring to employ, and to register the same in such manner as may be devised by the chief of said bureau, and to take such other action as may be deemed best by the chief of said bureau to promote the purposes of said offices.

SEC. 3. Section four of said chapter is hereby amended by adding at the end thereof the following: Any clerk or superintendent who directly or indirectly charges or receives any fee in the performance of his duties shall be deemed guilty of a misdemeanor and shall be subject to a fine of not more than one hundred dollars or to imprisonment in the county jail for a term not exceeding thirty days. Such fine or imprisonment shall disqualify him from holding further connection with said office.

SEC. 4. Said chapter is hereby further amended by striking out section five and inserting in place thereof the following: Section 5. In registering applications for employment and for employees wanted preference shall be given to residents of the Commonwealth.

SEC. 5. Said chapter is hereby further amended by striking out section six and inserting in place thereof the following: Section 6. Each superintendent shall make to the chief of said bureau such reports of applications for labor or employment and of other details of the work of his office as may be required by said chief. The said chief shall cause reports showing the business of the several offices to be prepared at regular intervals and to be exchanged between the said offices, and shall supply them to the newspapers and to citizens upon request; and the several superintendents shall cause such reports to be posted in a conspicuous place in their offices so that they may be open to public inspection.

SEC. 6. Chapter one hundred and thirty-five of the acts of the year nineteen hundred and seven is hereby amended by striking out section one and inserting in place thereof the following: Section 1. There shall be allowed and paid out of the treasury of the Commonwealth, upon the approval of the chief of the bureau of statistics of labor, for salaries and for contingent expenses in connection with the establishment and maintenance of free employment offices as herein provided for, such sum as the general court may annually appropriate therefor. The annual salary of the superintendents, and of such clerk as may be appointed in each office to act as chief clerk or assistant superintendent shall be fixed by the chief of said bureau, subject to the approval of the governor and council.

SEC. 7. The chief of the bureau of statistics of labor shall annually on or before the third Wednesday in January make a report to the general court covering the work of the free employment offices established in accordance with chapter four hundred and thirty-five of the acts of the year nineteen hundred and six.

Approved May 1, 1908.

CHAPTER 487.—*Inspection of factories—Appeals from orders of inspectors.*

SECTION 1. Whoever is aggrieved by the order, requirement, or direction of an inspector of factories and public buildings may, within ten days after the service thereof, appeal to a judge of the superior court for the county in which the building to which such order, requirement or direction relates is situated, for an order forbidding its enforcement; and after such notice as said court shall order to all parties interested, a hearing may be had before said court at such early and convenient time and place as shall be fixed by said order; or the court may appoint three disinterested persons, skilled in the subject-matter of the controversy, to examine the matter and hear the parties; and the decision of said court, or the decision, in writing and under oath, of the majority of said experts, filed in the office of the clerk of courts in said county within ten days after such hearing, may alter, annul or affirm such order, requirement or direction. Such decision or a certified copy thereof shall have the same authority, force and effect as the original order, requirement or direction of the inspector. If such decision annuls or alters such order, requirement or direction of the inspector, the court shall also order the said inspector not to enforce his order, requirement or direction, and in every case the certificate required by law shall thereupon be issued by said court or by said experts.

SEC. 2. The court may award reasonable compensation to experts appointed under the provisions of the preceding section which, if the order, requirement or direction of the inspector is altered or annulled, shall be paid by the county in which the application for an order of the court was made; otherwise by the applicant. If the order, requirement or direction of the inspector is affirmed by the court or the experts, costs shall be taxed against the applicant for the order of the court, as in civil cases, and shall be paid into the treasury of the county in which the application for such order of the court was made.

Approved May 5, 1908.

CHAPTER 489.—*Compensation for injuries to employees—Plans—Contracts waiving employer's liability.*

SECTION 1. Any employer of labor may submit to the state board of conciliation and arbitration a plan of compensation for employees in his employ, providing for payments to said employees in the event of injury in the course of their employment, based upon a certain percentage of the average earnings of such employees, and without reference to legal liability under the common law or the employer's liability act. After examination of such plan of compensation, and a public hearing thereon after public notice thereof, the board of conciliation and arbitration may, if it considers the same fair and just to the employees, give its approval thereof by certificate to be attached to such plan.

SEC. 2. After obtaining the approval of a plan of compensation as set forth in the foregoing section, it shall be lawful for the employer to enter into a contract with his employees by which such employees shall release the employer from liability in case of injury in the course of said employment and accept in lieu thereof the compensation provided in said plan of compensation.

SEC. 3. Either parent of any minor employee or the guardian of such minor may agree to said plan of compensation in behalf of the minor. Such agreement shall be in writing signed by the employee, or, in the case of a minor employee, by either parent or guardian, in the presence of two witnesses, of whom one shall be an employee at the time of such signature.

SEC. 4. No employer shall require as a condition of employment that any employee shall assent to any plan of compensation or in any way waive his legal right to recover damages for an injury outside the provisions of such plan.

SEC. 5. No contract under such plan of compensation shall be binding for more than one year from the date thereof.

SEC. 6. So much of section sixteen of chapter one hundred and six of the Revised Laws as is inconsistent herewith is hereby repealed.

Approved May 5, 1908.

CHAPTER 547.—*Hours of labor of employees in penal institutions.*

SECTION 1. The hours of labor for officers, instructors and employees of the State penal institutions shall not exceed sixty in each week; and every officer, instructor or employee whose duties require his presence at the institution seven days a week shall be given at least two days vacation in each month, which shall be in addition to the regular annual vacation and without loss of pay. Nothing in this section shall prevent the warden or superintendent, respectively, from requiring the services of all his officers, instructors and employees to assist in recapturing an escaped prisoner, or in any case of extraordinary emergency involving danger to property, to life, to public safety or to public health.

Approved May 27, 1908.

CHAPTER 553.—*Liability of railroad companies for injuries to employees—Assumption of risk.*

SECTION 1. Section one hundred and sixty-seven of Part II of chapter four hundred and sixty-three of the acts of the year nineteen hundred and six is hereby amended * * * so as to read as follows: Section 167. An employee of a railroad corporation who is injured by any locomotive, car or train which is used contrary to the provisions of sections one hundred and fifty-nine, one hundred and sixty-one, one hundred and sixty-two and one hundred and sixty-three, shall not be deemed to have assumed the risk of such injury, although he continues in the employment of such corporation after the unlawful use of such locomotive, car or train has been brought to his knowledge. An employee of a railroad corporation who is injured by any locomotive, car or train by reason of the negligence of any other employee of the corporation shall not be deemed to have assumed the risk of such injury.

Approved May 28, 1908.

CHAPTER 605.—*Assignments of wages.*

SECTION 7. No assignment of, or order for, wages to be earned in the future to secure a loan of less than two hundred dollars, shall be valid against an employer of the person making said assignment or order until said assignment or order is accepted in writing by the employer, and said assignment or order, and the acceptance of the same have been filed and recorded with the clerk of the city or town where the party making said assignment or order resides, if a resident of the Commonwealth, or in which he is employed, if not a resident of the Commonwealth.

SEC. 8. No such assignment of, or order for, wages to be earned in the future shall be valid, when made by a married man, unless the written consent of his wife to the making of such assignment or order is attached thereto.

Approved June 11, 1908.

CHAPTER 645.—*Hours of labor of women and children.*

SECTION 1. Section twenty-four of chapter one hundred and six of the Revised Laws * * * is hereby amended * * * so as to read as follows: Section 24. No child under eighteen years of age and no woman shall be employed in laboring in a manufacturing or mechanical establishment more than ten hours in any one day, except as hereinafter provided in this section, unless a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week; and in no case shall the hours of labor exceed fifty-six in a week, except that in any such establishment where the employment is by seasons, the number of such hours in any week may exceed fifty-six, but not fifty-eight: *Provided*, That the total number of such hours in any year shall not exceed an average of fifty-six hours a week for the whole year, excluding Sundays and holidays. Every employer shall post in a conspicuous place in every room in which such persons are employed a printed notice stating the number of hours' work required of them on each day of the week, the hours of commencing and stopping work, and the hours when the time allowed for meals begins and ends or, in the case of establishments exempted from the provisions of sections thirty-six and thirty-seven, the time, if any allowed for meals. The printed forms of such notices shall be provided by the chief of the district police, after approval by the attorney-general. The employment of such person at any time other than as stated in said printed notice shall be deemed a violation of the provisions of this section unless it appears that such employment was to make up time lost on a previous day of the same week in consequence of the stopping of machinery upon which he was employed or dependent for employment; but no stopping of machinery for less than thirty consecutive minutes shall justify such overtime employment, nor shall such overtime employment be authorized until a written report of the day and hour of its occurrence and its duration is sent to the chief of the district police or to an inspector of factories and public buildings.

SEC. 2. This act shall take effect on the first day of January in the year nineteen hundred and ten.

Approved June 13, 1908.

MISSISSIPPI.

ACTS OF 1908.

CHAPTER 93.—*Blacklisting telegraph operators—Membership in labor unions.*

SECTION 1. It shall be unlawful for any telegraph company, telephone company, telegraph press association, railroad company, or any leased wire firm or private individual doing business in this State, and employing telegraphers for the purpose of transmitting telegraph dispatches for the general public, or any press association, or private business, or in the operation of any railroad, to discriminate against any such telegrapher in its service or out of its service, or to blacklist or refuse employment to any telegrapher only because of such telegrapher's affiliation with or membership in any lawful organization or trade or labor union of telegraphers.

SEC. 2. Any such telegraph or telephone company, telegraph press association, railroad company or leased wire firm or private individual violating section 1 of this act shall be liable in actual and exemplary damages to the person so discriminated against.

SEC. 3. It shall be unlawful for any two or more such telegraph or telephone companies, telegraph press associations, railroad companies or leased wire firms or private individuals doing business in this State and employing telegraphers, to conspire, contract, mutually agree or cooperate to discriminate against, blacklist or refuse employment to any telegrapher merely on account of such telegrapher's affiliation with or membership in any lawful organization or trade or labor union of telegraphers.

SEC. 4. Any telegraph or telephone company, telegraph press association, railroad company, or leased wire firm or private individual violating section 3 of this act shall be jointly and severally liable in actual and exemplary damages to the party so aggrieved.

Approved March 7, 1908.

CHAPTER 95.—*Railroads—Backing locomotives at night.*

SECTION 1. It shall be unlawful for any person or corporation owning or operating a railroad as a common carrier of passengers and freight for hire in the State, to require or permit a locomotive engine to be backed on his or its line of railroad, in the nighttime, unless it is provided and equipped with a pilot and headlight on the rear of its tender:

Provided, however, That the provisions of this act shall not apply to railroads whose principal business is hauling logs, nor to locomotive engines running for coal or water, doubling hills, returning from trains when broken in two, going to or returning from trains in the yard limits of terminal stations, nor to engines engaged in regular switching service in yards, or road engines switching at intermediate stations; nor to any locomotive engines in cases of washouts, wrecks, or when going to the assistance of engines so disabled as to block the main track of a railroad.

SEC. 2. Any person or corporation violating the provisions of this act shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, and in addition thereto any person giving an order, permitting or requiring an employee of any railroad to violate the provisions of this act shall be guilty of a misdemeanor, and on conviction thereof shall be punished by imprisonment in the county jail not less than ten nor more than thirty days.

SEC. 3. Any person or corporation operating a railroad in violation of the provisions of this act shall be liable for injury or damage caused to any person by reason thereof, notwithstanding the negligence of the party injured or damaged.

Approved March 16, 1908.

CHAPTER 99.—*Employment of children—General provisions.*

SECTION 1. No children under the age of twelve years shall be employed in or permitted to work in any mill, factory or manufacturing establishment in this State.

SEC. 2. No child under the age of sixteen years shall be employed or detained in any mill, factory or manufacturing establishment within this State for more than ten hours in any one day, or for more than fifty-eight hours in any one week, or be employed in or detained in any such manufacturing establishment between the hours of 7 p. m. and 6 a. m.

SEC. 3. It shall be unlawful for any person, firm or corporation to employ or detain or permit to work in any mill, factory or manufacturing establishment in this State any child under the age of sixteen years without first requiring said child to present the affidavit of the parent or guardian or person standing in parental relation to such child, stating the place and date of birth of such child, and also stating the last school attendance of such child and grade of studies pursued, and the name of school and name of teacher in charge. The employer shall preserve such affidavit and keep a complete register of all such affidavits showing all the facts contained therein.

SEC. 4. It is the special duty of the sheriff of the county in which manufacturing establishments employing child labor are located to visit, at least once each month, each such manufacturing establishment, and see to the enforcement of this act.

SEC. 5. It is the duty of each county health officer to visit, without notice of his intention to do so, all manufacturing establishments employing child labor within his county, at least twice each year, and oftener if requested by the sheriff, and to promptly report to the sheriff any unsanitary condition of the premises, any child or children afflicted with an infectious, contagious or communicable disease, or whose physical condition renders such child or children incapacitated to perform the work required of them; and the sheriff shall promptly remove such child or children from such manufacturing establishment, and order the premises put in sanitary condition; and the judgment of the county health officer as to the physical condition of the children and sanitary condition of the premises shall be final and conclusive.

SEC. 6. It shall be the duty of the circuit judge to specially charge the grand jury to investigate violations of this act.

SEC. 7. Any officer, manager or superintendent of any manufacturing establishment in which child labor is employed who shall fail or refuse to give true and correct information demanded of him by any of the officers hereinbefore directed to inspect such establishments, or who shall fail or refuse to obey any lawful order of the sheriff or health officer of the county in which such establishment is located, for carrying out the purposes of this act, shall be guilty of a misdemeanor, and upon conviction shall be fined not less than ten dollars nor more than one hundred dollars.

SEC. 8. Any person, firm or corporation, or the superintendent, manager, or any officer of a manufacturing establishment employing any child or permitting any child to be employed by or to work in or to be detained in any mill, factory or manufacturing establishment in this State contrary to law, shall be guilty of a misdemeanor, and upon conviction shall be fined not less than fifty dollars nor more than one hundred dollars, or may be sentenced to the county jail for not less than ten days nor more than sixty days, or both such fine and imprisonment.

SEC. 9. The provisions of this act shall apply only to manufacturing establishments engaged in manufacturing or working in cotton, wool or other fabrics, and to manufacturing establishments where children are employed indoors at work injurious to health, or in operating dangerous machinery.

Approved March 21, 1908.

CHAPTER 194.—*Liability of railroad companies for injuries to employees—Fellow-servants.*

SECTION 4056 of the code of 1906 is hereby amended so as to read as follows:

Section 1. Every employee of a railroad corporation, and all other corporations and individuals, using engines, locomotives or cars of any kind or description whatsoever, propelled by the dangerous agencies of steam, electricity, gas, gasoline or lever power, and running on tracks, shall have the same rights and remedies for an injury suffered by him from the act or omission of such railroad corporation or others, or their employees, as are allowed by law to other persons not employed.

Knowledge by an employee injured of the defective or unsafe character or condition of any machinery, ways or appliances, or of the improper loading of cars, shall not be a defense to an action for injury caused thereby, except as to conductors or engineers in charge of dangerous or unsafe cars or engines voluntarily operated by them. When death ensues from an injury to an employee, an action may be brought in the name of the widow of such employee for the death of the husband, or by the husband for the death of his wife, or by a parent for the death of a child, or in the name of a child for the death of an only parent, for such damages as may be suffered by them respectively by reason of such death, the damages to be for the use of such widow, husband, parent or child, except that in case the widow should have children, the damages shall be distributed as personal property of the husband. The legal or personal representatives of the person injured shall have the same rights and remedies as are allowed by law to such representatives of other persons. In every such action the jury may give such damages as shall be fair and just, with reference to the injury resulting from such death to the person suing. Any contract or agreement expressed or implied, made by an employee to waive the benefit of this section shall be null and void; and this section shall not deprive an employee of a person, natural or artificial, or the legal or personal representatives of such person, of any right or remedy they now have by law.

Approved March 20, 1908.

NEW JERSEY.

ACTS OF 1908.

CHAPTER 25.—*Arbitration of labor disputes.*

SECTION 1. The act entitled "An act to provide for the amicable adjustment of grievances and disputes that may arise between employers and employees, and to authorize the creation of a state board of arbitration," approved March twenty-fourth, one thousand eight hundred and ninety-two, and all acts amendatory thereof and supplementary thereto, be and the same are hereby repealed.

Approved March 25, 1908.

CHAPTER 156.—*Civil service—Labor class.*

SECTION 16. The labor class shall include ordinary unskilled laborers. Vacancies in the labor class shall be filled by appointment from lists of applicants registered in their respective localities by the civil service commission. Preference in employment from such lists shall be given according to the date of application. There shall be separate lists of applicants for different kinds of labor or employments, and the said commission may establish separate labor lists for various localities, institutions and departments. The said commission shall require an applicant for registration for the labor service before he can be registered to furnish evidence or to pass such examinations as they may deem proper with respect to his age, residence, physical condition, ability to labor, sobriety, industry, capacity and experience in the trade or employment for which he applies.

Approved April 10, 1908.

Chapter 231.—*Employment of children—School attendance required.*

Section 1. Section one hundred and fifty-three of an act entitled "An act to establish a thorough and efficient system of free public schools, and to provide for the maintenance, support and management thereof," approved October nineteenth, one thousand nine hundred and three, is amended to read as follows:

Section 153. Every parent, guardian or other person having control of a child between the ages of seven and seventeen years inclusive, shall cause such child to regularly attend a day school in which, at least, the common school branches of reading, writing, arithmetic, spelling, English grammar and geography are taught by a competent teacher, or receive equivalent instruction elsewhere than at school, unless such child is above the age of fifteen years and has completed the grammar school course prescribed by the state board of education, and in addition thereto is regularly and lawfully employed in any useful occupation or service. Such regular attendance shall be during all the days and hours that the public schools are in session in the city, town or district in which the child resides, unless it be shown to the satisfaction of the board of education of the school district in which such parent, guardian or other person resides, that the bodily or mental condition of such child is such [as] to prevent his or her attendance at school. If such child be within the age of seventeen years and has completed the grammar school course and is not regularly and lawfully employed in any useful occupation or service, such child shall attend the high school or manual training school in said city, town or district in which such child resides, if there is a high school or manual training school in said city, town or district; if there is no high school or manual training school in said city, town or district, said child shall be transported to a high school or manual training school as provided in section one hundred and nineteen of this act.

Approved April 13, 1908.

Chapter 273.—*Factory inspectors—Female inspector.*

Section 1. In addition to the inspectors provided by the act to which this is a supplement, and the amendments and supplements thereto, the governor shall, immediately after the passage of this act, appoint two suitable persons as inspectors, one of whom shall be a woman, whose salary, powers and duties and term of office, shall be the same as the inspectors already provided for.

Approved April 14, 1908.

Chapter 284.—*Bribery of employees.*

Section 1. Whoever gives, offers or promises to an agent, employee or servant, any gift or gratuity whatever, without the knowledge and consent of the principal, employer or master of such agent, employee or servant, with intent to influence his action in relation to his principal's, employer's or master's business; or an agent, employee or servant who, without the knowledge and consent of his principal, employer or master, requests or accepts a gift or gratuity or a promise to make a gift, or to do an act beneficial to himself, under an agreement, or with an understanding that he shall act in any particular manner to his principal's, employer's or master's business; or an agent, employee or servant who, being authorized to procure materials, supplies or other articles, either by purchase or contract for his principal, employer or master, or to employ service or labor for his principal, employer or master, receives directly or indirectly, for himself or for another, a commission, discount or bonus from the person who makes such sale or contract, or furnishes such materials, supplies or other articles, or from a person who renders such service or labor, and any person who gives or offers such an agent, employee or servant such commission, discount or bonus shall be guilty of a misdemeanor.

Approved April 15, 1908.

CUMULATIVE INDEX OF LABOR LAWS AND DECISIONS RELATING THERETO.

[This index includes all labor laws enacted since January 1, 1908, and published in successive issues of the Bulletin, beginning with Bulletin No. 80, the issue of January, 1909. Laws enacted previously appear in the Twenty-second Annual Report of the Commissioner of Labor. The decisions indexed under the various headings relate to the laws on the same subjects without regard to their date of enactment and are indicated by the letter "D" in parenthesis following the name of the State.]

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DIRECTORY OF BUREAUS OF LABOR IN THE UNITED STATES AND IN FOREIGN COUNTRIES.

State.	Name of bureau.	Title of chief officer.	Location of bureau.
UNITED STATES.			
United States	United States Bureau of Labor	Commissioner	Washington, D. C.
California	Bureau of Labor Statistics	Commissioner	San Francisco.
Colorado	Bureau of Labor Statistics	Deputy Commissioner.	Denver.
Connecticut	Bureau of Labor Statistics	Commissioner	Hartford.
Idaho	Bureau of Immigration, Labor, and Statistics.	Commissioner	Boise City.
Illinois	Bureau of Labor Statistics	Secretary	Springfield.
Indiana	Bureau of Statistics	Chief	Indianapolis.
Iowa	Bureau of Labor Statistics	Commissioner	Des Moines.
Kansas	Bureau of Labor and Industry	Commissioner	Topeka.
Kentucky	Department of Agriculture, Labor, and Statistics.	Commissioner	Frankfort.
Louisiana	Bureau of Statistics of Labor	Commissioner	Baton Rouge.
Maine	Bureau of Industrial and Labor Statistics.	Commissioner	Augusta.
Maryland	Bureau of Industrial Statistics	Chief	Baltimore.
Massachusetts	·Bureau of Statistics of Labor	Chief	Boston.
Michigan	Bureau of Labor and Industrial Statistics.	Commissioner	Lansing.
Minnesota	Bureau of Labor	Commissioner	St. Paul.
Missouri	Bureau of Labor Statistics and Inspection.	Commissioner	Jefferson City.
Montana	Bureau of Agriculture, Labor, and Industry.	Commissioner	Helena.
Nebraska	Bureau of Labor and Industrial Statistics.	Deputy Commissioner.	Lincoln.
New Hampshire	Bureau of Labor	Commissioner	Concord.
New Jersey	Bureau of Statistics of Labor and Industries.	Chief	Trenton.
New York	Department of Labor	Commissioner	Albany.
North Carolina	Bureau of Labor and Printing	Commissioner	Raleigh.
North Dakota	Department of Agriculture and Labor.	Commissioner	Bismarck.
Ohio	Bureau of Labor Statistics	Commissioner	Columbus.
Oklahoma	Department of Labor	Commissioner	Guthrie.
Oregon	Bureau of Labor Statistics and Inspection of Factories and Workshops.	Commissioner	Salem.
Pennsylvania	Bureau of Industrial Statistics	Chief	Harrisburg.
Rhode Island	Bureau of Industrial Statistics	Commissioner	Providence.
Virginia	Bureau of Labor and Industrial Statistics.	Commissioner	Richmond.
Washington	Bureau of Labor	Commissioner	Olympia.
West Virginia	Bureau of Labor	Commissioner	Wheeling.
Wisconsin	Bureau of Labor and Industrial Statistics.	Commissioner	Madison.
FOREIGN COUNTRIES.			
Argentina	Departamento Nacional del Trabajo	Presidente	Buenos Aires.
Austria	K. K. Arbeitsstatistisches Amt im Handelsministerium.	Vorstand	Wien.
Belgium	Office du Travail (Ministère de l'Industrie et du Travail).	Directeur General	Bruxelles.
Canada	Department of Labor	Minister of Labor	Ottawa.
Canada: Ontario	Bureau of Labor (Department of Public Works).	Secretary	Toronto.
Chile	Oficina de Estadística del Trabajo	Jefe	Santiago.
Finland	Industristyrelsen ([a])		Helsingfors.
France	Office du Travail (Ministère du Travail et de la Prévoyance Sociale).	Directeur	Paris.
Germany	Abteilung für Arbeiterstatistik, Kaiserliches Statistisches Amt.	Präsident	Berlin.
Great Britain and Ireland.	Labor Department (Board of Trade)	Commissioner of Labor.	London.

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[a] Issues a bulletin of labor.

State.	Name of bureau.	Title of chief officer.	Location of bureau.
FOREIGN COUNTRIES—conc'd.			
Italy	Ufficio del Lavoro (Ministero di Agricoltura Industria e Commercio).	Direttore Generale	Rome.
Netherlands	Centraal Bureau voor de Statistiek ([a]).	Directeur	'S-Gravenhage.
New South Wales.	State Labor Bureau	Director of Labor	Sydney.
New Zealand	Department of Labor	Minister of Labor	Wellington.
Spain	Instituto de Reformas Sociales	Secretario General	Madrid.
Sweden	Afdelning för Arbetsstatistik (Kgl. Kommerskollegii).	Direktör	Stockholm.
Switzerland	Secrétariat Ouvrier Suisse (semi-official).	Secrétaire	Zürich.
Uruguay	Oficina del Trabajo (Ministero de Industrias, Trabajo é Instrucción Pública).		Montevideo.
International	International Labor Office	Director	Basle, Switzerland.

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Charity relief and wage earnings, by S. E. Forman.

No. 80. Woman and child wage-earners in Great Britain, by Victor S. Clark, Ph. D.

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BULLETIN

OF THE

BUREAU OF LABOR.

No. 82. WASHINGTON. MAY, 1909.

MORTALITY FROM CONSUMPTION IN OCCUPATIONS EXPOSING TO MUNICIPAL AND GENERAL ORGANIC DUST.

BY FREDERICK L. HOFFMAN.

INTRODUCTION.

The mortality from consumption is known to be very much greater among persons employed in the so-called dusty trades than among those who work in the open air, or under otherwise more sanitary and favorable conditions affecting health and life. To clearly emphasize this important fact, of vital interest to millions of wage-earners employed in more or less dusty trades, it is only necessary to call attention to the material difference in the consumption death rate of certain well-defined employments, where there can be no reasonable doubt that the conclusions are not invalidated by possible serious statistical errors. Thus, for illustration, one of the most dust-exposing occupations is that of the marble and stone cutter, and in this employment, according to the Twelfth Census, the death rate from consumption was 5.41 per 1,000; while, in contrast, among farmers, planters, and farm laborers the death rate from this disease was only 1.12 per 1,000, and among lumbermen and raftsmen, only 1.07 per 1,000. So marked a difference as this must have an essential cause, far more profound than mere differences in social or economic conditions, and foremost of the causes responsible for the excessive mortality from consumption is the more or less considerable inhalation of dust produced during necessary mechanical and industrial processes. Such dust, by its mechanical properties, causes specific injury to the lungs and the delicate membranes of the air passages, where, by its pathogenic properties, direct disease infection is introduced into the human system, often with disastrous consequences to health and life. Naturally the destructive effects of dust must vary according to its quality and mechanical properties, and so much so is this the case that metallic dust is unquestionably the most injurious, while organic dust of animal origin is probably the least harmful. In an article in Bulletin No. 79 the writer quite fully discussed the general problem of dust pathology and symptomatology, preliminary to a discussion in detail of the degree of consumption frequency in some 42 specific trades and occupations with exposure to metallic, mineral, vegetable fiber, and animal and mixed fiber dust. The present discussion includes 4 additional occupations with exposure to municipal or street dust and 15 with exposure to general organic dust.

The effects of dust on human beings depend, first, upon the amount of dust; second, the kind of dust; third, the constancy of its presence; fourth, the susceptibility of the individual; and, fifth, the method employed to protect the individual against the entrance of dust into the human organism. By rational methods of factory hygiene, chiefly effective in dust removal at the point of origin, the dust nuisance in industrial establishments can be materially reduced, with most beneficial consequences to the health of the persons employed. While much progress has been made in factory sanitation, the evidence is entirely conclusive that present conditions affecting health and life in industry are still very far from what they should be.

The evidence regarding the excessive mortality from consumption in certain dusty trades is so overwhelmingly conclusive that there can be little doubt that the degree of consumption frequency in industry is in almost exact proportion to the amount of dust inhalation, with due regard, of course, to the varieties of dust, which vary according to mechanical, pathogenic, and other properties. While the foregoing conclusion has been an accepted theory of preventive medicine for many years, it is only within comparatively recent times that it has been recognized as a governing principle in the rational administration of sanitary and factory laws. Much importance is conceded to the disposal of industrial and domestic dust as a branch of sanitary work. According to one writer dust may be a threefold factor in pulmonary tuberculosis, because, " First, it may act as a predisposing cause, as a direct physical irritant to the respiratory passages, thus inflaming the mucous membranes and weakening their resistance to bacillary invasion; second, it may carry infection directly by means of dried, fresh tubercular sputum that some ignorant or careless consumptive has recently expectorated; third, it may aggravate tuberculosis by converting an incipient and curable case into one of rapid and virulent destruction of lung tissue because of the addition of pus-producing germs."([a])

Concerning the effects of dust on the human organism, another writer has observed that—

> Statistical data showed definitely that patients the subjects of pneumoconiosis were especially prone to attacks of acute bronchitis,

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[a] "The prevention of tuberculosis," by Dr. H. S. Anders, Pennsylvania Medical Journal, January, 1906, Vol. IX, No. 4, p. 247.

to pneumonia, and all other forms of pulmonary infection, and especially to pulmonary tuberculosis, as stated by many observers, notable among them was Merkel. Added to these changes in the lung tissue, which have at the same time decreased its functionable possibilities and lowered its resistance against secondary processes, there were great deposits of dust in the lymph nodes. They found these nodes increased in size and black with the dust contained therein. When one considered the important rôle which these glands played in the protection of the body from pathogenic organism which entered through the respiratory tract, one could well appreciate the reason why in these cases lymphoid tuberculosis was the rule. He had found tuberculous lesions almost universally present when pneumoconiosis had brought about this condition in the lymph nodes, and in New York City they might be looked upon as constantly associated lesions. (a)

The term pneumoconiosis, as here used, is the general name for lung affections resulting from deposits of dust in the lungs and air passages. The term is modified according to the various kinds of dust, and where the deposit in the lungs is coal dust the pathological lesions are called anthracosis; where the deposits are of metallic dust, siderosis; where the deposit is of stone dust, chalicosis, or silicosis; and where the deposit is of fine cotton particles, or vegetable fiber dust, the term byssinosis is used.

Since modern medical research has made it apparent that pathogenic micro-organisms or specific bacilli of infectious diseases are not, as a rule, to any considerable extent conveyed by industrial dust, it is evident that the observed injurious consequences of dust inhalation are largely because of the mechanical properties of the dust itself and the injury it does to the lungs. It is because of this fact that the lung diseases of workmen exposed to industrial dust are specifically defined as pneumoconiosis, or, according to Oliver, industrial lung disease, which in its symptoms and course differs from ordinary tuberculosis, being generally more specifically defined by writers on the diseases of occupation as fibroid phthisis.

In regard to this aspect of the industrial dust problem, it was stated in the address above referred to that—

> It seemed that the dangerous quality of inhaled dust lay chiefly in two characteristics, one on the physical character of dust, the other on its organic nature. With very finely comminuted and light dust the resultant lesions of the lungs were much more innocent and secondary pulmonary diseases were much less frequent as a result. On the contrary, [with] dust which contained sharp pointed and jagged particles, inflammatory and irritative changes were much more constant and diffuse and secondary infections, as with tuberculosis, were much more frequent. Dust which was chiefly injurious on account of its organic character was such as contained organisms or organic ma-

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[a] Address of Dr. Harlow Brooks, The Medical Record, November 23, 1907, p. 878.

terial which were prone to excite disease in the body, as the dried sputa of tuberculous subjects. Other infections so transmitted were those of anthrax, glanders, diphtheria, actinomycosis, and bubonic plague. Obviously the dust which was most detrimental of all to the human body was one which combined the characteristics of both classes.(a)

In summarizing his conclusions the writer just quoted held—first, that dust in itself was productive of serious disease conditions, particularly of the respiratory and digestive tracts; second, that these primary conditions predispose to secondary lesions, particularly to pulmonary and lymphatic tuberculosis; third, that many contagious and infectious diseases were transmitted through the agency of dust; fourth, that in a city the size of New York, or in large cities generally, the production of large quantities of dust, often of a highly dangerous character, could not be prevented; but, fifth, that such dust could in most instances be relatively and economically collected and disposed of, and the production of unnecessary dust could be and should be prevented by properly framed and enforced regulations.

The foregoing observations in large part refer to the problem of municipal or street dust, which primarily affects men engaged in street cleaning and refuse collection, drivers and teamsters, hackmen and cabmen, street railway employees, letter carriers, etc. In all of these occupations the health-injurious consequences of municipal dust are materially minimized by outdoor life, fresh air, and sunlight, the last named being the most effective agency in the destruction of the pathogenic qualities of municipal dust. The investigations of C. J. Lewis, however, seem to prove that under given conditions of meteorology the number of pathogenic bacteria in municipal dust may be very high, while under opposite conditions the proportion may be very low. Densely populated districts, refuse heaps, and polluted soils, according to this authority, have a marked influence upon the number and character of the pathogenic bacteria in the atmosphere.

The problem of dust prevention on streets and highways, especially since the introduction of the automobile, has attracted wide attention, and, among other results, led to the publication of a circular on experiments with dust preventives by the United States Department of Agriculture in 1908.(b) The experiments reported upon seem to confirm the belief that it is entirely practicable to materially reduce the dust nuisance on public highways, and to fully confirm the ex-

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[a] Address of Dr. Harlow Brooks, The Medical Record, November 23, 1907, p. 878.

[b] See Progress Reports of Experiments with Dust Preventives, Circular No. 89, Office of Public Roads, United States Department of Agriculture, April 20, 1908.

periments of Guglielminetti, who, at the Congress of Climatotherapy and Urban Hygiene, held in Nice, France, in 1907, presented evidence to prove that the application of crude oil to roadbeds was not only comparatively inexpensive, but that it rendered the roads more resistant and diminished cost of repairs, with practically an entire suppression of dust. Upon the same subject Dr. P. Boobbyer, of Nottingham, in an address before the Royal Sanitary Institute Congress, in 1906, made a strong argument in favor of street pavements of smooth material and more effective regulations governing the disposition of refuse and the sweeping of house dust into the streets. Effective sanitary regulations governing street-cleaning methods and refuse disposal must necessarily exert a decided beneficial influence upon the health of the large body of men who, in the pursuit of their respective callings, spend most of their lives on the public streets and highways, while at the same time they must also prove of vast benefit to the public at large.

Of equal importance in this connection brief mention may be made of the sanitary dangers of the vast quantities of dust produced in the demolition of buildings, often old and insanitary premises, through which dust and disease germs inimical to health are disseminated, primarily to the injury of the workmen employed in house-wrecking undertakings. Mention may also be made of the regulations of the London County Council, which decrees that the time for such work in London shall be restricted to between the hours of 6 o'clock in the evening and 10 o'clock in the morning, and it is made incumbent on those responsible for the work of demolition to order that the walls be thoroughly watered during the process. Since most of the labor employed in the demolition of buildings is usually of a casual nature, the health-injurious effects are not, of course, as serious as they would be if the occupation were carried on continuously.

OCCUPATIONS WITH EXPOSURE TO MUNICIPAL DUST.

STREET CLEANING AND REFUSE DISPOSAL.

The number of persons employed in the United States in street cleaning and refuse disposal is unknown, but it may be approximately estimated for the large cities on the basis of the known number of persons employed in the city of New York. A return has been published for Greater New York for the year 1904, according to which the number of persons employed in the street-cleaning department was 4,625, of which 2,686 were sweepers, 1,262 were drivers, and the remainder supervising officials and general laborers.(a) If the ratio

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[a] Circular issued by the New York Department of Street Cleaning, May 13, 1904.

of persons employed for street-cleaning purposes to the estimated population of Greater New York holds good for the estimated aggregate population of large American cities, or such as in 1900 had 25,000 inhabitants and over, the approximate number employed in 1909 is 30,000. Of this large number of most useful and, in fact, indispensable workers about 58.1 per cent are sweepers, whose employment predisposes particularly and continuously to the inhalation of more or less injurious dust, largely inorganic, but partly organic, and which, because of its peculiar and characteristic composition, has been defined as municipal dust. In the nature of the employment the exposure must vary in exact proportion as methods for previous street watering are in use, but in most cities at the present time such precautions are generally neglected.

Street sweepers often include a very considerable proportion of old men who have become incapacitated for other forms of labor, but the tendency in our large cities at least is to eliminate this element as not adapted to the requirements of economical municipal administration, and an increasing proportion of men are employed at an age period of much greater susceptibility to disease infection than in the case of the old, who, in a measure, represent the survival of a type more or less immune. In an address on the insanitary condition of London streets, it was stated with reference to this aspect of the problem that—

> While in the main streets, where work goes on while the traffic is running, it is necessary to have men with all their faculties and full physical power to do the work, at the same time that they are keeping watch against the dangers in which they work; yet in the quiet streets of little traffic it is a class of labor upon which aged and less capable men can very well be employed, and are better so employed even at a lower wage than turned adrift to become chargeable to the poor rate.([a])

The evils incident to crude methods of street cleaning and refuse disposal were early recognized by Ramazzini, who, in 1670, held that men employed on the roads were subject to disorders of the digestive organs and generally suffered greatly from epidemics. This early view of an extremely careful observer of actual conditions and their consequences is curiously enough confirmed by the opinion of to-day as expressed by Professor Sedgwick, that atmospheric dust must be included in the causes responsible for the spread of typhoid fever.([b])

Halfort, a German authority, writing in 1845, held that street cleaners suffered as the result of inhaling street dust and in consequence of exposure to more or less dangerous emanations. Hirt, in his treatise on The Diseases of Workmen, with special reference to dusty trades, sustains this view and refers to the earlier observations of Sonnenkalb and Chrastina, who had reported upon the health-injurious consequences of the street dust of Leipzig and Vienna. Hirt calls attention to the wide degree of divergence in the character of municipal dust in different localities materially influenced, of course, by the materials used in road construction. These early writers gave more attention to the inorganic dust particles than to the organic elements, and writing as they did before the discovery of the bacilli of tuberculosis the seriously infectious character of street dust under certain favorable conditions escaped their attention. More recently—

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[a] Address of W. N. Blair, Transactions of the Sanitary Institute, 1900, p. 292.

[b] Report of Pittsburg Filtration Commission, January, 1899, p. 12.

> some very suggestive facts have been published regarding the prevalence of tuberculosis among street cleaners of Greater New York. It was ascertained, according to published reports, that about one-third of the 5,000 street cleaners were infected with tuberculosis. This startling discovery was emphasized by the statement that every employee had, previous to his employment, been examined by civil service physicians and pronounced free from organic disease. It was also disclosed by the investigation that on the west side, where the streets were wider and better kept, the force was less liable to illness than on the east side, where the streets were more dirty and where diseases of the nose, throat, and lungs were more common. Contrasts were drawn between the conditions in Berlin and Greater New York, and it was held that in the former city the street-cleaning force was quite healthy and free from tubercular diseases, the street cleaning force in Greater New York was particularly liable to this disease, chiefly on account of the fact that the dust was collected, in many cases, without the street having been previously sprinkled. The introduction of the modern system of street-cleaning machines, removing the dust under cover, and performing at the same time sprinkling, cleaning, and dumping processes, is a much-to-be-desired improvement, which is certain to have a beneficial effect upon the health of the street-cleaning force.([a])

The mortality from tuberculosis among street cleaners of New York City has also been discussed in an extended article in the New York Medical Journal for 1904, from which the following extracts are made as perhaps the most authoritative expression of medical opinion regarding the health-injurious aspects of this employment available at the present time:

> It has been stated that five years' work as a street cleaner of New York makes the average individual a consumptive. When we consider that every employee in the street-cleaning department must be carefully examined and found to be in perfect health before being admitted into the service; when we further consider that street cleaning is an outdoor occupation, and, lastly, that in European cities, as, for example, in Berlin, the street sweepers show the smallest mor-

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[a] The Medical Examiner and General Practitioner, December, 1907, pp. 361, 362.

> bidity and mortality from tuberculosis and other diseases among that city's laboring population, the medical profession may well ask itself why conditions are so different in New York.
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> To the close observer it is not difficult to find an explanation. In well regulated European cities the streets are frequently sprinkled before they are swept; here the sweeping is almost invariably done dry. Now, it is not the tubercle bacillus alone which renders our street cleaners consumptive, but it is the constant inhalation of all kinds of dust and the consequent irritation of the pulmonary surfaces, which make the invasion of the germ of tuberculosis more easy. The sweeping of streets in the dry state should be considered as a crime against our fellow-men. It is not the air, but the dust in the air, which renders New York such a dangerous place, particularly in summer, to people predisposed to pulmonary troubles. While, as a natural consequence of being in closer proximity to the dust, the street cleaners are the first to suffer, the citizens at large who are obliged to remain in New York during the summer months suffer also to a considerable degree.
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> * * * No street should be swept without being previously sprinkled, and the gutters in the streets should be flushed daily, except in freezing weather. To forbid people to spit altogether when outdoors is unreasonable and any such law would not be carried out, but a law could be enforced which made spitting in the gutter permissible, but expectorating on the sidewalk and in the middle of the street punishable by a severe fine. Besides all these precautions, street cleaners could be provided with respiratory masks as an additional protection, particularly in very dusty localities. ([a])

The same subject has been considered from a different point of view in an address on street dust and public health, delivered before the New York Academy of Medicine, April 4, 1907, in which attention was called to the fact that even where the immediate infection by the bacillus tuberculosis might not lead to the disease the inhalation of street dust might easily develop a catarrh which would make a previously existing tuberculosis fatal. In reference to the health-injurious character of street dust it was stated that—

> When thus atomized and inhaled it acts injuriously upon all the sensitive mucous membranes of the respiratory passages, partly through mechanical irritation and trauma and partly by conveying to them and imbedding in their folds a great variety of germs. These germs are not necessarily those of specific diseases such as the pneumococcus or bacillus tuberculosis, for such germs are known to be killed by conditions of prolonged exposure to dryness and sunlight, whereas moisture proves favorable to their longevity. But sufficient nonspecific germs are conveyed by street dust to excite catarrhal or purulent inflammations, and by thus fostering a chronically diseased or irritated condition of the respiratory passages, the latter are rendered liable to more serious infections. Herein lies the chief menace to health from street dirt. The danger is complicated

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[a] New York Medical Journal, May 14, 1904, pp. 937, 938.

by the fact that the sputum of patients having chronic tuberculosis, bronchitis, or nasopharyngeal catarrh, expectorated when they are at large in the streets, is swept from the sidewalks and added to the general street dirt.([a])

The foregoing conclusions apply with particular force to street cleaners, who are continuously exposed to the risk of dust inhalation, and most so, of course, where previous street sprinkling is not practiced.([b]) In consequence of such exposure there is a decided increase in the liability to tuberculosis and other respiratory diseases, chiefly pneumonia, which modern medical research has clearly proven to be an infectious disease. Other factors, no doubt, complicate the problem, and among these mention may be made of the liability to overstrain on the part of refuse collectors or ashmen, who often suffer from injuries received from lifting heavy barrels, so much so that any given street-cleaning force has continuously a number of men laid off or on half pay on this account. Diminished disease resistance under conditions like the foregoing necessarily increases the liability to tubercular or other infection.

Street cleaning and the disposal of city refuse require, in other words, to be considered as an extremely important and highly complex proposition, demanding the highest administrative skill for its practical solution. Street sweeping by machines is gradually replacing sweeping by hand—that is, in most of the principal thoroughfares of our large cities; but progress in even this direction is much slower than the needs of the situation demand.([c])

The health-injurious consequences of street dust have been summed up in a discussion of the address of Dr. W. G. Thompson, previously referred to, in which it was stated that " to sweep a street when it was dry was a crime against one's fellow-men. It was a mistaken idea to think that dust which did not contain pathogenic, i. e., specific disease-producing, micro-organisms was harmless. It was, on the contrary, most harmful, because of its irritating influence on the mucous membranes of the respiratory organs." The speaker referred to the relative increase in tuberculosis among the street sweepers of the city of

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[a] " Street dirt and public health," by W. Gilman Thompson, M. D., New York Medical Journal, April 20, 1907, p. 725.

[b] For a discussion of the problem of municipal dust, a treatise on Dust and Its Dangers, by T. M. Prudden, M. D., New York, 1907, chapter 9, may be consulted.

[c] The problem of city refuse and its disposal as a metropolitan problem has been discussed by Mr. H. D. Parsons in the Scientific American Supplement of July 4, 1908, while a new system of street cleaning and a sanitary street cleaner is described in the Scientific American for May 10, 1902. An earlier descriptive account of machines for sprinkling and sweeping streets appeared in the Scientific American Supplement of March 24, 1888.

New York, which had first been noticed a few years ago, and which, in his opinion, "was not solely due to the inhalation of tuberculous sputum which might have been expectorated in the streets by consumptives, and which had most likely been rendered innocuous by sunlight and air," but the increase "was due to the irritating influence of dry dust, raised by the street sweepers themselves," because the streets were not sprinkled previously to the sweeping process. He concluded his remarks with the statement that—

> The pulmonary tissue thus irritated invited an invasion of the bacilli to which the street cleaner, in his unsanitary tenements and other unhygienic environments, was as much exposed as anybody else. When the streets were sprinkled before they were swept there would be less tuberculosis among the street cleaners. As proof of all this he cited the well-known fact that the street cleaners of Berlin were the healthiest body of men of all the city's employees and virtually free from tuberculosis.([a])

There are no American official vital statistics of persons employed in street cleaning and refuse disposal, nor have the statistics of the large street-cleaning departments of the principal cities been made public otherwise than in the report in 1904 by J. M. Woodbury, as street-cleaning commissioner of the city of New York. The industrial insurance mortality statistics for men in this group of employments for the period 1897 to 1906 include 180 recorded deaths, of which 33, or 18.3 per cent, were from consumption. Of the mortality of street cleaners from respiratory diseases other than consumption, 23 were from pneumonia, 8 from asthma and bronchitis, and 2 from other diseases in this group, a total of 33, or 18.3 per cent. If the deaths from consumption and from other respiratory diseases are combined, 36.7 per cent of the mortality of street cleaners was from diseases of the lungs and air passages. It is evident from the foregoing statistics that the recorded mortality from consumption among men in this employment is not decidedly excessive, but it must be clearly kept in mind that there is probably no occupation more subject to changes and from which the physically impaired are more rigidly excluded by occupation selection than in the street-cleaning and refuse-disposal service of large cities. The table which follows states in detail the consumption mortality of street cleaners by divisional periods of life, with the comparative proportionate mortality of the general population in the United States registration area during the period 1900 to 1906:

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[a] Discussion by Dr. S. A. Knopf, Medical Record, April 27, 1907, pp. 705, 706.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG STREET CLEANERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for street cleaners from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of street cleaners, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Street cleaners.	Males in registration area, 1900 to 1906.
15 to 24 years	......	......	......	27.8
25 to 34 years	18	8	44.4	31.3
35 to 44 years	37	13	35.1	23.6
45 to 54 years	47	7	14.9	15.0
55 to 64 years	45	3	6.7	8.1
65 years and over	33	2	6.1	2.7
Total	180	33	18.3	14.8

While the preceding statistical data are not entirely conclusive, they would seem to confirm the conclusion, when taken in connection with the foregoing observations, based on a careful consideration of all the available facts and conditions, that street cleaners as a class are subject to health-injurious circumstances connected with their employment, and that the exposure to dust inhalation results in a comparatively high degree of consumption frequency at ages 25 to 44, inclusive.

DRIVERS AND TEAMSTERS.

Drivers and teamsters, perhaps more than any other class of outdoor workmen, are exposed to the risk of considerable and continuous inhalation of municipal dust. By reason of the usual position of the driver's seat, perhaps 8 feet or more above the ground, the degree of direct exposure is, however, much less than in the case of street sweepers and refuse collectors. The wages of drivers and teamsters are, as a rule, rather low, and the hours of labor are often both long and uncertain. Drivers and teamsters are under the further disadvantage of having to sit in a fixed position for many hours at a time, and in addition night work may be named as probably one of the factors detrimental to the health of men employed in this occupation. While a large portion of the working time of drivers and teamsters, cabmen and coachmen, etc., is spent out of doors, a not inconsiderable length of time is spent in stables, the air of which is usually more or less foul and polluted. A fair proportion of cabmen and teamsters work at night, and their working hours are irregular, with a constant temptation to dissipation. Finally, it is to be considered that the occupation of cabman or teamster does not require a long apprenticeship or any special skill, and that the occupation often is recruited from many of the failures in other employments.

Thackrah (1832) refers to cart drivers as those exposed to atmospheric vicissitudes, but as being "healthy in proportion to their temperance and the nourishment they take." He remarks that "their wages, however, are low; they are often indifferently fed; and many, particularly among the coal leaders, congregate and spend at the alehouse that money which would be better employed in buying solid food."([a])

The mortality in this group of employments is briefly discussed by Dr. Jacques Bertillon, from whose address on the "Morbidity and mortality according to occupation," as translated for the Journal of the Royal Statistical Society, the following is quoted:

> Coachmen, wagoners, draymen are subject to a very high mortality to which it may be well to devote a little attention. In England coachmen, cabmen (not domestics) are distinguished from carmen, carriers, carters, draymen. In both the death rate is so high, that the occupation may be considered one of the most unhealthy in the country. Of the two that of the coachmen is the worst (the domestic coachman is excluded, for he enjoys very good health), probably because he is obliged to remain on his seat in all weathers and seasons, while the wagoner can walk by his horses and thus keep himself warm. At Paris, similar results are found. Either occupation has a great mortality, but the cabmen are worse off than the carmen and draymen, whose rate even becomes normal after 50. The English statistics teach us the causes of death among this class. Their digestive organs are in good condition, but all the other organs are constantly attacked. As might be expected, the respiratory organs are most often diseased. Phthisis is very common; alcoholism is enormously developed, and in its train follow diseases of the liver, urinary organs, nervous and circulatory systems. Gout is very frequent, and deaths from accidents exceed the average. In Switzerland "carting and driving" give rise to a mortality almost double the average. Phthisis is not the principal factor, for up to 30 years of age it is unusual rather than otherwise among the Swiss coachmen and wagoners; above this age it is over the average, but without reaching anything like the high level we found among stone masons, locksmiths, and watchmakers, for example. Although the occupation of coachmen is evidently unhealthy (and it should be noted that a man must be strong and muscular to harness and groom horses, and that selection would tend to diminish the mortality peculiar to this profession), the Italian sickness tables assign to them but few days of illness while they are young. It is only after 45 that their morbidity is above the average to any great extent. The English consider "horsekeepers, grooms, jockeys" separately; their death rate is identically the same as that of the coachmen, i. e., is very high.([b])

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[a] The Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, pp. 13, 14.

[b] Journal of the Royal Statistical Society, 1892, p. 581.

Arlidge, in his treatise on the diseases of occupations, considers the entire group of drivers and teamsters, including drivers of public vehicles—cab, omnibus, and tram-car men, carriers and carters—at some length, holding that they form a class of occupied people having as a common character the carriage of persons and goods with more or less exposure to weather. But "the differences in health conditions outnumber the points of similarity; for the former are almost as many as are the individuals occupied in the business." He continues:

> In great cities like London, the drivers of omnibuses and cabs form a large fraternity, subjected to special police regulations, held together by the bonds of a common employment, and by voluntary associations. They suffer from long and often late hours, from exposure to the inclemencies of weather, and to many hardships and annoyances. They are recruited from the list of private coachmen and grooms, and to no small extent from the prodigals and the good-for-nothing born to superior positions. Among them, as a body, intemperance prevails widely, along with its frequent accompaniment, dissolute living. Their abodes are frequently unhealthy, not uncommonly situated in confined and ill-ventilated yards, and placed above the stables. In short, they are surrounded by a host of insanitary conditions, and, as a result, suffer the consequences of such; furthermore, they have more than their share of accidents.([a])

After stating that the comparative mortality figure of this group of employments is surpassed by only five other occupations in English experience, Arlidge states that the mortality from consumption was as 359 among drivers and teamsters to 220 in other occupations; the mortality from nervous diseases was as 134 to 119; the mortality from diseases of circulation was as 160 to 120; the mortality from respiratory maladies as 341 to 182; from urinary diseases as 65 to 41; hepatic diseases as 54 to 39; alcoholism as 33 to 10; gout as 11 to 3; and accidents as 84 to 67.

Thomas Oliver, in his discussion of the mortality of drivers of public vehicles, observes that men in this group of employments "suffer and become prematurely old in consequence of their exposure to inclement weather, late hours, and irregularity in getting their meals. Alcoholism and exposure to cold are responsible for their tendency to develop gout and rheumatism, and through these disorders to secondary affections of the kidneys, heart, and respiratory organs. They die at the rate of 1,482 to 1,000 of the male population generally."([b])

The foregoing observations are confirmed by the United States census of 1890, according to which the mortality of draymen, hackmen, teamsters, drivers, etc., in the registration States was materially in excess of the corresponding mortality of occupied males generally. Comparing the mortality of this group, however, with the mortality of men employed in agriculture, transportation, and other outdoor occupations, it appears that while the average mortality rate of this class at ages 15 to 24 was 4.13 per 1,000, the death rate for draymen, hackmen, etc., was 6.47; at ages 25 to 44 the respective death rates were 5.88 and 11.07; at ages 45 to 64 the rates were 11.54 and 19.39, respectively; and at ages 65 and over the rates were 59.31 and 63.23. As observed in the census report, the death rates of draymen, hackmen, teamsters, etc., were higher in each age group than the average rate for occupations of this class, and an analysis of the causes of death proves that the most prominent among this class were consumption and respiratory diseases. The mortality from consumption of draymen, hackmen, etc., was 304 per 100,000, against 162 for persons employed in agriculture, transportation, and other outdoor occupations. The corresponding death rates for respiratory diseases were 237 and 192, respectively.([a])

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[a] Diseases of Occupations, by J. T. Arlidge, p. 127.

[b] Dangerous Trades, by Thomas Oliver, p. 798.

The mortality from consumption among draymen, hackmen, etc., was highest in the cities, or 363 per 100,000 living, while in the rural districts it was only 105 per 100,000. There was the same marked difference in the mortality from respiratory diseases, which was 281 per 100,000 in the cities and only 89 in the rural districts.([a])

The foregoing facts are in entire conformity to English experience and would seem to warrant the conclusion that the exposure to municipal dust on the part of drivers and teamsters in cities is at least one of the predisposing causes of their high mortality from consumption and respiratory diseases.

The number of drivers and teamsters in the United States, according to the census report on occupations for 1900, was 532,637, and of this number 10,777, or 2.0 per cent, were 65 years of age and over, which compares with 4.7 per cent for the entire male population of the continental United States. At ages 55 to 64 the proportion was 5.7 per cent, and at ages 45 to 54, 12.8 per cent, leaving 79.5 per cent at ages 15 to 44, inclusive. The occupation was briefly considered in the vital statistics of the census of 1900, but it is evident that the returns are not entirely trustworthy, in any event not for ages 45 and over. At ages 15 to 24 the mortality from all causes in the registration States in 1900 was 4.7 per 1,000, which compares with 4.4 for the manufacturing and mechanical class, and 2.6 for the mercantile and trading class. At ages 25 to 44 the death rate of draymen, hackmen, and teamsters was 9.9 per 1,000 in 1900, which compares with 8.4 for the manufacturing and mechanical class and 6.7 for the mercantile and trading class. The mortality from consumption is not returned by divisional periods of life, but is given in the aggregate for all ages as 2.6 per 1,000 in 1900, which compares with 2.6 per 1,000 for the manufacturing and mechanical class, and 1.7 per 1,000 for the mercantile and trading class. The mortality from other respiratory diseases was 1.7 per 1,000 in 1900, which is also rather high, especially so in view of the fact that the proportion of draymen, hackmen, and teamsters at advanced ages was comparatively small.

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[a] Report on Vital and Social Statistics, Part I, Eleventh Census of the United States, 1890, pp. 159 and 163.

The vital statistics of this group of occupations, according to the census of 1900, are inconclusive, as were those of 1890, and the death rate from all causes is somewhat lower at all ages except 65 and over. The mortality from consumption at ages 15 and over for drivers, hackmen, and teamsters was ascertained to be 2.6 per 1,000 in 1900, against 3.0 per 1,000 for the census year 1890, while the mortality from respiratory diseases other than consumption was ascertained to be 1.7 per 1,000 in 1900, against 2.4 for the census year 1890.

The recorded industrial insurance mortality statistics of drivers and teamsters include 3,850 deaths, of which 999, or 25.9 per cent, were from consumption. Of the mortality of drivers and teamsters from respiratory diseases other than consumption 483, or 12.5 per cent, were from pneumonia; 27, or 0.7 per cent, from asthma; 56, or 1.5 per cent, from bronchitis; and 66, or 1.7 per cent, from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 42.4 per cent of the mortality of drivers and teamsters was from diseases of the lungs and air passages. The excess in the consumption mortality of drivers and teamsters is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all the specified age periods except 55 to 64, the excess was most pronounced at ages 35 to 44, when out of every 100 deaths from all causes 32.1 were from consumption, against a normal expected proportion of 23.6. The analysis of the consumption mortality of drivers and teamsters in detail is set forth in the table following.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG DRIVERS AND TEAMSTERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for drivers and teamsters from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of drivers and teamsters, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Drivers and teamsters.	Males in registration area, 1900 to 1906.
15 to 24 years	386	126	32.6	27.8
25 to 34 years	1,024	400	39.1	31.3
35 to 44 years	974	313	32.1	23.6
45 to 54 years	660	113	17.1	15.0
55 to 64 years	468	35	7.5	8.1
65 years and over	338	12	3.6	2.7
Total	3,850	999	25.9	14.8

In Rhode Island out of 531 deaths reported during the ten-year period ending with 1906, 131, or 24.7 per cent, were from consumption. Of the mortality from other respiratory diseases there were 63 deaths from pneumonia, or 11.9 per cent, and 14 deaths from asthma, bronchitis, and other respiratory diseases, or 2.7 per cent of the mortality from all causes. Combining the mortality from consumption and from other respiratory diseases gives 39.3 per cent as the mortality of drivers and teamsters in Rhode Island from diseases of the lungs and air passages.

The English occupation mortality statistics for drivers and teamsters are found in part under the titles carmen and carriers, and during the three-year period 1900–1902 included 9,505 deaths from all causes. Of this number of deaths 1,446, or 15.2 per cent, were from consumption; and 1,973, or 20.8 per cent, from respiratory diseases other than consumption. Of the deaths from all causes 3,419, or 36.0 per cent were, therefore, from diseases of the lungs and air passages. In the following table a comparison is made of the mortality from all causes among men employed as carmen and carriers with that of occupied males generally, and the result indicates an excessive mortality at all ages except 20 to 24, when the mortality was slightly below the normal expected rate for all occupied males:

MORTALITY FROM ALL CAUSES AMONG **CARMEN AND CARRIERS,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II. Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for carmen and carriers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.80	+ 0.36	115
20 to 24 years	4.41	4.29	− .12	97
25 to 34 years	6.01	6.71	+ .70	111
35 to 44 years	10.22	13.09	+ 2.87	128
45 to 54 years	17.73	20.42	+ 2.69	115
55 to 64 years	31.01	36.46	+ 5.45	118
65 years and over	88.39	107.84	+19.45	122

In the table which follows the mortality from consumption and from respiratory diseases other than consumption among men employed as carmen and carriers is compared with the normal mortality for all occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption was slightly below the normal expected at all ages except 35 to 44 and 65 and over. The difference from the normal expected, however, was comparatively small at all ages. The mortality from other respiratory diseases, however, was somewhat excessive at all ages, but the excess was most pronounced at ages 35 and over. The tabular analysis which follows is self-explanatory and requires no further comment:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **CARMEN AND CARRIERS,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for carmen and carriers.			Death rate per 1,000 for all occupied males.	Death rate for carmen and carriers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.49	−0.05	91	0.24	0.26	+0.02	108
20 to 24 years	1.55	1.05	− .50	68	.48	.57	+ .09	119
25 to 34 years	2.03	1.79	− .24	88	.77	1.15	+ .38	149
35 to 44 years	2.74	2.91	+ .17	106	1.66	2.69	+1.03	162
45 to 54 years	3.04	2.97	− .07	98	3.32	4.44	+1.12	134
55 to 64 years	2.16	1.94	− .22	90	6.54	9.44	+2.90	144
65 years and over	1.11	1.47	+ .36	132	17.77	25.54	+7.77	144

COACHMEN, CABMEN, AND MEN EMPLOYED IN OMNIBUS SERVICE.

Coachmen, cabmen, and men employed in omnibus service may properly be separately considered in the group of persons exposed to municipal dust. In the census statistics of the United States these employees are apparently included under the heading of "Drivers, teamsters, and hackmen;" in the English statistics and in the industrial insurance mortality statistics coachmen and cabmen are separately tabulated. The English occupation mortality statistics for men employed as coachmen, cabmen, and in omnibus service are quite conclusive of the injurious effects of these occupations on health, particularly at ages over 25. In the table which follows a comparison is made of the mortality from all causes among men in this group of occupations with occupied males generally, and at ages 25 and over it is shown that the general mortality of this class exceeds the general average by from 0.36 to 7.71 per 1,000:

MORTALITY FROM ALL CAUSES OF COACHMEN, CABMEN, AND MEN IN OMNIBUS SERVICE, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for coachmen, cabmen, and men in omnibus service.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.89	−0.55	77
20 to 24 years	4.41	3.51	− .90	80
25 to 34 years	6.01	6.37	+ .36	106
35 to 44 years	10.22	12.51	+2.29	122
45 to 54 years	17.73	20.76	+3.03	117
55 to 64 years	31.01	34.84	+3.83	112
65 years and over	88.39	96.10	+7.71	109

A more extended comparison is made in the next table, in which the mortality of coachmen, cabmen, and omnibus service employees from consumption and from other respiratory diseases is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that at ages 25 and over the mortality from consumption is excessive except at ages 65 and over. The excess is highest at ages 35 to 64. The table further shows that the mortality from other respiratory diseases is excessive among men in this class at ages 25 and over, the excess ranging from 6 per cent to 24 per cent, or from 0.05 to 4.20 per 1,000. The two tables derived from English experience indicate quite clearly an excess mortality among men employed as coachmen, cabmen, and in omnibus service from consumption and other respiratory diseases.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **COACHMEN, CABMEN, AND MEN IN OMNIBUS SERVICE,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for coachmen, cabmen, and men in omnibus service.			Death rate per 1,000 for all occupied males.	Death rate for coachmen, cabmen, and men in omnibus service.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.47	−0.07	87	0.24	0.17	−0.07	71
20 to 24 years	1.55	1.22	− .33	79	.48	.37	− .11	77
25 to 34 years	2.03	2.22	+ .19	109	.77	.82	+ .05	106
35 to 44 years	2.74	3.58	+ .84	131	1.66	1.97	+ .31	119
45 to 54 years	3.04	3.95	+ .91	130	3.32	3.74	+ .42	113
55 to 64 years	2.16	2.75	+ .59	127	6.54	7.57	+1.03	116
65 years and over	1.11	.98	− .13	88	17.77	21.97	+4.20	124

The recorded industrial insurance mortality statistics of coachmen, cabmen, and hackmen include 651 deaths from all causes, of which 163, or 25 per cent, were from consumption. Of the mortality of this class from other respiratory diseases, 94 were from pneumonia, 6 from asthma, 10 from bronchitis, and 12 from less frequent respiratory diseases. When the deaths from consumption and from other respiratory diseases are combined, it is found that 43.8 per cent of the mortality of coachmen, cabmen, and hackmen was from diseases of the lungs and air passages. The excess in the consumption mortality of this class is still more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages, the excess was most pronounced at ages 15 to 24, when out of every 100 deaths from all causes, 48.7 were from consumption, against a normal expected proportion of 27.8. The analysis of the consumption mortality of coachmen, cabmen, and hackmen is set forth in detail in the table following.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG CABMEN, COACHMEN, AND HACKMEN, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for cabmen, coachmen, and hackmen from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of cabmen, coachmen, and hackmen, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Cabmen, coachmen, hackmen.	Males in registration area, 1900 to 1906.
15 to 24 years	39	19	48.7	27.8
25 to 34 years	136	58	42.6	31.3
35 to 44 years	154	52	33.8	23.6
45 to 54 years	149	22	14.8	15.0
55 to 64 years	105	11	10.5	8.1
65 years and over	68	1	1.5	2.7
Total	651	163	25.0	14.8

The preceding observations and statistical data fully support the conclusion that men employed as drivers and teamsters, coachmen, cabmen, hackmen, etc., represent employments subject to decidedly health-injurious conditions, which are responsible more or less for the comparatively high degree of consumption frequency in the occupations considered.

SUBWAY EMPLOYEES.

Subways for transportation purposes have been so recently brought into use in the United States that no extensive statistical data are as yet available regarding the health of men employed in the operation of underground railways. The construction of tunnels and subways involves many dangers to health and life, which, however, do not come within the scope of this discussion, which is limited to men employed chiefly in connection with subway transportation. Underground railways differ considerably in construction, and as distinct types mention may be made of the relatively short subway in Boston, the long but fairly spacious subway in New York, and the tubelike freight subway in Chicago. Conditions, no doubt, are at their best where there are large openings connecting the subway with the surface, and at their worst where considerable depth precludes natural ventilation. The complaint is general that the air in subways is polluted and more or less injurious to health and life. Investigations by Dr. C. F. Chandler, tending to prove that the amount of oxygen is sufficient, do not warrant the opinion that there are not other health-injurious conditions present which make subway travel and employment a menace to health and life. The investigations of

Doctor Sutherland, in connection with the operation of the Central London Railway, have shown that while the outside air contained on an average 2.8 parts of carbon dioxide per 10,000 volumes, the interior air of the stations and cars within the tube showed that on the station platforms the proportions varied from 4.2 to 7.4 parts during the hours of moderate travel, and during the business hours the proportion rose from 11.0 to 20.5 parts. Such a proportion of carbon dioxide is held to be in a high degree unhealthy to a strong person, while a much lower proportion can not but be injurious to a person of weakly constitution.([a])

The most thorough investigation into the sanitary aspects of subway employment has been made by Dr. G. A. Soper, consulting sanitary engineer to the New York City Board of Rapid Transit Commissioners. In an address before the New York Academy of Medicine on March 15, 1906, Doctor Soper considered in detail the whole subject of the condition of the air of the New York subway, observing, with particular reference to the dust problem, that—

> The dust of the subway was made the subject of special study from chemical, physical, and biological standpoints. Chemical analyses of the dust showed that it contained 61.30 per cent of iron, nearly all of which was in the metallic state. There were also 21.94 per cent of organic matter, consisting of particles of animal and vegetable origin, 15.58 per cent of silica and other matters insoluble in acid, and 1.18 per cent of oil. The average of a considerable number of determinations of the weight of dust suspended in the air was 61.6 milligrams per thousand cubic feet of air. The maximum weight was 204 milligrams. Twenty-three comparative tests were made to determine, with particular care, the weight of dust in the air of the subway and in that of the streets at the same time, and as near the same places as possible. These showed an excess in the subway over the outside air averaging 47 per cent. In eighteen cases, the weight of dust in the subway air over that in the air of the streets ranged from 11 to 800 per cent.([b])

Doctor Soper explained that the origin of a large part of the subway dust was readily traceable to the air currents from the streets and to the movement of passengers. Some of the dust, he held, was produced in the subway by the gradual wear and tear of wood and cement and other materials of construction, but a considerable amount of the dust was pulverized metal, ground up by the operation of the trains. In conclusion he said:

> It has been demonstrated that the metal in the air is chiefly cast iron derived from the grinding of the powerful brakes of the cars. It is a matter of official information that the loss in weight of the brake shoes, which are the principal wearing surfaces, has amounted

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[a] See New York Medical Record, February 14, 1903, p. 259.

[b] New York Medical Record, April 21, 1906, p. 614.

> to one ton per mile per month. In addition, the wheels themselves and the tracks are being constantly ground up, especially at the curves.
>
> It must not be supposed that the great aggregate weight of metal which these figures indicate is wholly converted into dust and mingled with the subway air which is breathed by the average traveler. Many of the iron particles are too large and too heavy to be carried far, even by the strongest draughts of the moving trains. Many bits of smaller size, after being whirled about for a brief period, settle upon the oily tracks or fall into the voids in the broken stone ballast and are so retained. Only a portion of the finer particles find their way into the general atmosphere of the subway and are kept afloat by draughts.
>
> At the same time, it is needless to point out to a body of physicians the significance which attaches to the presence of a large amount of finely divided metallic iron in the air. All text-books of hygiene, of pathology, and of medicine describe them under the terms of siderosis, pneumoconiosis, fibroid phthisis, and grinders' rot.([a])

The foregoing observations of a thoroughly qualified expert in matters of sanitary engineering, with special reference to questions and problems of public health, including industrial hygiene, clearly emphasize the sanitary dangers of subway employment. In fact, Doctor Soper stated in his address that he had advised the rapid transit board to this effect, pointing out that the metal particles in the air of the subway might produce injurious effects upon the health of the employees, and that this entire subject should be thoroughly investigated.([a])

The investigations of Doctor Soper in behalf of the New York rapid transit commission were continued, and the following is from a brief printed summary of the results, bearing, in part, upon the health-injurious consequences of subway employment:

> The investigation conducted for the New York rapid transit commission by Doctor Soper, to determine the sanitary conditions, particularly as regards the effect of the air upon the health of employees, has materialized in two reports, in the first of which the author states that although the subway air is disagreeable, it is not harmful except for the presence of iron dust. In the second of the two reports, dealing with the effect of iron dust upon the employees, it is stated that a sufficient number of persons were subjected to physical examination to determine the condition of the average employee. A careful search was made for evidences of diseases of the lungs, such as are common among people engaged in occupations where dust is present. An examination of the air showed the presence of a large amount of iron dust, and of various kinds of fragments due to the wear and tear of the subway and the abrasion of the clothing of the passengers. From the samples taken it was estimated that in every month 25 tons of iron and steel are ground off the rails, brake shoes, and wheels, on the 21 miles of the subway. Much of this material is in such large pieces that it falls immediately to the track, and adheres to the surface of the ballast or ties.

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[a] New York Medical Record, April 21, 1906, p. 614.

Among the conclusions reached by Doctor Soper are the following: The air of the subway as determined by analysis and careful studies of the health of the men is not injurious, the most objectionable feature being the dust, made up chiefly of angular particles of iron. The odor and heat of the subway, although they are disagreeable, are not actually injurious to health, the most objectionable atmospheric conditions, as far as health is concerned, being the strong drafts and changes of temperature which occur at the stations.

Careful physical examination showed that an excessive amount of dry pleurisy without pain or other physical discomfort existed among the men, the proportion being 53 per cent among the employees, as compared with 14½ per cent among persons not engaged in subway work. Congestion and inflammation of the upper air passages were prevalent.([a])

Doctor Soper presents his final conclusions on the air of the New York subway in the Technology Quarterly for March, 1907, including a qualified technical analysis of the problems of temperature and humidity, the chemical and bacteriological condition of the air, the unpleasant odors more or less prevalent at all times and in all places in the subway, and finally, with reference to dust, the conclusions are summed up, as follows:

The dust was examined microscopically, chemically, and bacteriologically, by a special method which was devised for determining the gross weight of dust in a measured volume of the air, and by an instrument for estimating the total number of floating particles present.

It was possible, by means of a common horseshoe magnet held beneath a piece of paper sprinkled with the dust, and slowly moved from side to side, to distinguish particles of iron and steel. These metal particles could be made to rise on edge and reverse their position by changing the pole of the magnet presented to them.

In appearance the dust was always black and very finely powdered. It was easily distinguishable by the eye from dusts collected in the streets, and in theaters, churches, office buildings, and mercantile and manufacturing establishments.

The subway dust had a peculiarly adhesive character, which caused it to attach itself securely to all surfaces, even when these were vertically placed and glazed. All parts of the subway which had not been recently cleaned and painted, or were not of a dark color, were sprinkled with this black dust when the investigation began.

When examined microscopically, the dust was found to be composed of particles of many substances, conspicuous among which were fine, flat plates of iron. In fact, these iron particles could often be seen with the naked eye, glistening upon the hats and garments of persons who had been riding in the subway.

Particles 2 millimeters [0.08 inch] long were, on one occasion, taken from a magnet which had been carried in the hand on a ride of twenty minutes in the cars. By comparison, it was found that magnets hung up in the subway collected more particles of iron than magnets of the same size and strength hung up in an iron foundry or a dry grinding and polishing establishment.

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[a] Scientific American, August 31, 1907, p. 146.

Particles of subway dust, not iron, comprised bits of silica, cement, stone, fibers of wood, wool and cotton, molds, and indistinguishable fragments of refuse of many kinds.

The separate chemical analyses of eleven samples of accumulated dust from the subway showed the following average percentage composition: Total iron, 61.30, including 59.89 metallic iron; silica, etc., 15.58; oil, 1.18; organic matter, 21.94.

A large part of the metallic iron came from the wear of the brake shoes upon the steel rims of the wheels of the cars. The wear upon the brake shoes was very severe. By weighing them when they were new and after they were worn out, and determining the number used, it was calculated by the operating company that one ton of brake shoes was ground up every month for each mile of subway.

There was also some loss to the rails and rims of the wheels and to the contact shoes which ran upon the third rail. Probably 25 tons per month would be a low estimate of the weight of iron and steel ground up in the whole subway every month.

The average weight of dust found in the subway * * * was 61.6 milligrams per thousand cubic feet of air, or 2.25 milligrams per cubic meter; in the streets, 52.1 milligrams per thousand cubic feet, or 1.83 milligrams per cubic meter; difference, 9.5 milligrams. The maximum * * * was 204 milligrams.

The weight of dust which the average passenger inhaled in one-half hour in the subway was very slight. Assuming that 360 cubic centimeters, or 22 cubic inches, of air were taken in at each breath, and that the passenger breathed 18 times per minute, the total quantity of air which passed into the lungs in half an hour was about 6.88 cubic feet, or 0.19 cubic meter. Using the average of all results, or 61.6 milligrams per 1,000 cubic feet, as the weight of dust suspended in the atmosphere, it appears that the average passenger took into his nose or mouth 0.42 milligram of dust in a ride of half an hour.

The stations where the greatest weights of dust were found were express stations; there the amount of metallic dust formed by the braking of the trains was much greater than at the local stations and the travel from the streets greatest.([a])

Quotations have been made at length from the investigations of Doctor Soper, because they constitute the only qualified inquiry which has been made into the subject. Subways are being constructed in several cities, and the number of persons employed in subway transportation is constantly increasing. The employment, however, is too new to afford an opportunity for a statistical analysis of the mortality which has occurred, but the preceding general considerations bring out clearly and forcibly the danger of subway dust and its relation to the occurrence of pulmonary consumption as well as to the occurrence of diseases of the lungs and air passages generally. The occupation demands rigid supervision by the sanitary authorities on the one hand, and by the transportation companies on the other. It would be advisable to have the men examined periodically by medical men, and nothing which sanitary science can suggest should be left undone to reduce the dust danger to a minimum. While statistical data are not available at this time, the conditions inimical to life and health in connection with subway employment may be considered as already established, and although the dust in subways is injurious to the health chiefly of employees continuously at work therein, it also has its serious significance to the millions of passengers compelled to make use of the subways for transportation purposes.

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[a] Technology Quarterly, March, 1907, pp. 108–116. Reprinted in annual report of the Smithsonian Institution for 1907, and as a separate publication, No. 1852, Washington, D. C., 1908.

SUMMARY OF CONCLUSIONS REGARDING OCCUPATIONS WITH EXPOSURE TO MUNICIPAL DUST.

Four occupations exposing to municipal dust have been considered in detail. While the data for the different occupations considered are not always identical, the statistics available indicate with approximate accuracy the health-injurious effect of the employments. Only one group of such occupations—draymen, hackmen, and teamsters—is included in the vital statistics of the United States census of 1900. The total number of males in that group 15 years of age and over in the last census year was 532,637. Of this number only 10,777, or 2 per cent, had attained to age 65 and over, against a normal expected proportion of 4.7 per cent. The details of the age distribution are given in the following table by divisional periods of life, together with the corresponding percentage distribution of all occupied males:

NUMBER AND PER CENT OF MALES IN EACH AGE GROUP IN OCCUPATIONS WITH EXPOSURE TO MUNICIPAL DUST, COMPARED WITH NUMBER AND PER CENT IN ALL OCCUPATIONS IN THE UNITED STATES, 1900.

[From report on Occupations, Twelfth Census of the United States, 1900.]

Age.	Males in occupations exposed to municipal dust.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
15 to 24 years	141,671	26.6	5,933,720	26.0
25 to 34 years	164,052	30.8	5,993,847	26.3
35 to 44 years	117,865	22.1	4,704,682	20.6
45 to 54 years	67,923	12.8	3,250,259	14.3
55 to 64 years	30,349	5.7	1,856,181	8.1
65 years and over	10,777	2.0	1,063,856	4.7
Total	532,637	100.0	22,802,545	100.0

According to this analysis the proportion of males 15 to 44 years was rather large in the group of occupations exposed to municipal dust, or 79.5 per cent, against a normal expected percentage of only 72.9. At ages 45 to 54 the proportion was 12.8 per cent, against an expected percentage of 14.3 for occupied males generally, while at ages 55 and over the per cent of draymen, hackmen, and teamsters was only 7.7, against an expected percentage of 12.8.

It is unfortunately not possible to present a combined summary of the census vital statistics of males employed in all of the occupations included in this group of employments exposing to municipal dust, since it is only for draymen, teamsters, and hackmen that the census data have been made public. In the registration area of the United States the census death rate from consumption for draymen, teamsters, and hackmen was 2.6 per 1,000, against 2.4 for all occupations, and the death rate from other respiratory diseases was below the average of 1.7, against 2.0 expected.

The occupation mortality statistics of Rhode Island are available only for drivers and teamsters in the group of employments exposing to municipal dust. The Rhode Island returns are for 531 deaths from all causes, of which 131 were from consumption and 77 from other respiratory diseases. The corresponding percentages were 24.7 per cent of deaths from consumption for persons employed as drivers and teamsters, against 17.8 per cent for occupied males generally in the State of Rhode Island. The percentage of deaths from other respiratory diseases was 14.6, as compared with 12.5 for all occupied males in Rhode Island.

The English vital statistics for this group of occupations are available for carmen and carriers, and for cabmen, coachmen, and men employed in omnibus service. When the returns for these occupations are combined, they show an excessive mortality at ages 25 and over from all causes, and at ages 35 and over from consumption. The death rates from other respiratory diseases are excessive at all ages 20 and over. The statistics in detail, by divisional periods of life, are set forth in tabular form as follows:

MORTALITY FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER RESPIRATORY DISEASES IN OCCUPATIONS EXPOSED TO MUNICIPAL DUST, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 due to all causes among—		Death rate per 1,000 due to consumption among—		Death rate per 1,000 due to other respiratory diseases among—	
	All occupied males.	Occupations with exposure to municipal dust.	All occupied males.	Occupations with exposure to municipal dust.	All occupied males.	Occupations with exposure to municipal dust.
15 to 19 years.....	2.44	2.44	0.54	0.48	0.24	0.22
20 to 24 years.....	4.41	3.98	1.55	1.12	.48	.49
25 to 34 years.....	6.01	6.56	2.03	1.97	.77	1.01
35 to 44 years.....	10.22	12.81	2.74	3.23	1.66	2.35
45 to 54 years.....	17.73	20.58	3.04	3.45	3.32	4.10
55 to 64 years.....	31.01	35.65	2.16	2.35	6.54	8.50
65 years and over..	88.39	101.76	1.11	1.22	17.77	23.69

The industrial insurance mortality statistics are available for street cleaners, drivers, and teamsters, and for cabmen, coachmen, and hackmen. These occupations returned in the aggregate 4,681 deaths from all causes, and of this number 1,195, or 25.5 per cent, were from consumption. The deaths from other respiratory diseases numbered 787, or 16.8 per cent. The expected percentage by the standard adopted for the registration area of the United States was 14.8 per cent for consumption and 11.7 per cent for other respiratory diseases. When the mortality from consumption, and respiratory diseases other than consumption, are combined, the proportionate number of deaths among men in occupations with exposure to municipal dust is found to be 42.3 per cent in this group of causes, against 26.5 per cent expected.

PROPORTIONATE MORTALITY FROM CONSUMPTION IN OCCUPATIONS EXPOSED TO MUNICIPAL DUST, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATON AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for occupations exposed to municipal dust from experience of an industrial insurance company; figures for males in the registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths in occupations with exposure to municipal dust, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Occupations with exposure to municipal dust.	Males in registration area, 1900 to 1906.
15 to 24 years	425	145	34.1	27.8
25 to 34 years	1,178	466	39.6	31.3
35 to 44 years	1,165	378	32.4	23.6
45 to 54 years	856	142	16.6	15.0
55 to 64 years	618	49	7.9	8.1
65 years and over	439	15	3.4	2.7
Total	4,681	[a]1,195	[a]25.5	[b]14.8

[a] There were also 787 deaths from other diseases of the respiratory system, or 16.8 per cent of the deaths from all causes.

[b] The per cent of deaths from other diseases of the respiratory system in the registration area was 11.7.

It is evident from the foregoing observations and statistical data relating to a number of representative employments with exposure to municipal dust that the health-injurious effects of such exposure are reflected in the comparatively small proportion of persons of advanced years, the comparatively high general death rate, and the comparatively high specific death rates from consumption and from other respiratory diseases.

OCCUPATIONS WITH EXPOSURE TO GENERAL ORGANIC DUST.

GRAIN HANDLING AND STORAGE.

Modern processes in handling and storing grain eliminate to a considerable extent the necessity for human labor, and the tendency is toward the further introduction of automatic appliances, chiefly for the purpose of mixing and conveyance. Modern grain elevators are enormous structures, in some cases with a capacity of more than a million bushels, but the actual number of laborers employed in them is comparatively small. The processes are simple, and are briefly described as follows:

> The grain is dropped from the car into a pocket under the floor; in this pocket, or boot, is the lower end of the line of belts armed with steel buckets that scoop up the grain and carry it to the top story, emptying it there into receiving bins one hundred and fifty feet above the car. From these receiving and separating bins, or hoppers, it passes down to a series of hoppers on the floor below by simple gravitation. In these hoppers it is weighed, and passes down, by an ingenious revolving device, into whichever of the huge storage bins it is directed to. From these, when needed, it is simply spouted into boats or cars for shipment.([a])

A modern grain elevator is, as a rule, built circular in shape, of hollow terra-cotta tile, the interior being practically inaccessible for general purposes. No labor attendance is required except, perhaps, for occasional inspection purposes. On account of the fire hazard and the liability to dust explosion, the earlier type of wooden structure is gradually passing away. Four types of modern elevators are recognized: (1) Those having rectangular bins built of steel plates; (2) those having cylindrical bins built of steel plates; (3) those having cylindrical bins of tiles strengthened with steel bands; and (4) those having cylindrical bins built of concrete. These are elevators for storage purposes, and there is really no necessity for anyone to enter the bins, which are in most cases practically inaccessible. When the grain is transferred in bulk from terminal elevators to barges or steamers a considerable quantity of dust is apt to be generated except where the process is substantially an automatic one. A large number of grain shovelers, however, are employed, especially in the cities on the Great Lakes, and that the condition of this class of labor is not a satisfactory one was brought out in the grain shovelers' strike at Buffalo a few years ago.

The liability to dust inhalation affects nearly every employment necessary in connection with grain handling or storage, and the employment has, from the earliest times, attracted the attention of authorities on occupation diseases. Ramazzini, writing in 1670, held that:

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[a] Cosmopolitan Magazine, March, 1899, p. 495.

> All grain, and especially wheat, whether kept in pits under ground, as in Tuscany, or in barns, as in the countries upon the Po, have always a very small powder mixed with them; I mean not only that which they gather upon the barn floor in threshing, but another worse sort of dust, that grain is apt to throw from itself upon long keeping. For the seeds of corn being replenished with a volatile salt, insomuch that if they are not well dried in the sun before they are laid up, they heat mightily, and turn presently to a powder; it can not be but that some thin particles must fly off from the husk that surrounds them, over and above the powder and rotten dust proceeding from the consumption made by moths, worms, mites, etc., and their excrements. Now there being a necessity of sifting and meting corn and other grain, the men employed in that service are so plagued with this powder or dust, that when the work is done they curse their trade with a thousand imprecations. The throat, the lungs, and the eyes sustain no small damage by it, for it stuffs and dries up the throat; it lines the pulmonary vessels with a dusty matter that causes a dry and obstinate cough; and it makes the eyes red and watery. Hence it is that almost all who live by that trade, are short breathed, and cachetic, and seldom live to be old; nay they are very apt to be seized with an orthopnœa, and at last with a dropsy. Besides, this powder has such a sharpness in it, that it causes a violent itching, all over the body.([a])

This opinion of a careful and scientific observer of actual conditions has been confirmed by subsequent inquiries, but there has been so decided a change in the methods of grain handling in large quantities that the dust nuisance has been materially reduced. Another factor favorably affecting the health conditions in this employment is that the habits of the men have undergone a material improvement for the better, and as brought out in the grain shovelers' strike at Buffalo, previously referred to, one of the main contentions on the part of the men was that they should not be paid by the inspectors at places selected by them near to saloons.

Halfort, a German authority on trade diseases, writing in 1845, observed that grain measurers and dusters were exposed to an extremely irritating dust injurious to the lungs, while the bent position on the part of the workmen during the sifting process was unquestionably a predisposing cause of lung diseases.

Hirt studied exposure to grain dust at considerable length, including threshing and other agricultural employments. He called attention to observed differences in the effects of different kinds of grain, but his conclusions were not final. His analysis of grain dust proved the presence of considerable quantities of mineral matter, chiefly silica or common earth, while the organic particles were minute portions of the grain proper and other vegetable matter. In his opinion the effect of the dust was extremely irritating, especially to those not accustomed to it, causing much cough and acute bronchial catarrh. While he considered rye and wheat dust most injurious, because of the peculiar microscopical structure of the grain particles, he refers to the much larger relative quantity of dust generated in the handling of oats, but apparently the observations were not conclusive. Of course, in the case of agricultural laborers the actual exposure is comparatively short and in this respect less serious than in the case of men employed in the handling and storage of grain at terminal elevators. Even in the case of these men, however, there is the advantage of seasonal employment, and since practically no skill is required, many of the men employed are only casual laborers. This accounts, in part, for the fact that the consequences of dust exposure, which would otherwise probably be serious, have not been observed to be such in actual practice.

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[a] Treatise of the Diseases of Tradesmen, Ramazzini, English edition of 1705, pp. 170, 171.

An extended account of the atmosphere in granaries is included in the Annual Report of the Chief Inspector of Factories and Workshops of Great Britain for 1904. While this report describes conditions typical of English ports, the descriptive account is equally applicable to present-day conditions in this country:

> The cargoes of grain arrive at irregular and uncertain periods, and it is only when they are being discharged that the whole of the machinery is at work, and an opportunity of complete inspection is afforded. I found that the grain after being elevated from the ship's hold falls down through a chute into the basement. In the course of its descent much of the dust gets separated from the grain, and there are two openings near the bottom of the chute through which the dust is drawn by an exhaust fan into a settling chamber. A second elevator takes the grain from the basement to the top floor, where it is carried by conveyer bands to the bins. No automatic weighers are used. A considerable amount of dust is said to be given off as the grain falls into the bins. Only three or four men including the foreman are usually employed, and the number on no occasion is said to exceed six. The foreman stated that he had been engaged in this work for 13 years and had never felt any ill effects from the dust. Two other men informed me they had been employed here for three and six years respectively, and that during this time their health had been very good. Only about one hour's trimming at a time is necessary for each bin, and the men are frequently not employed in this work for days together. Russian oats, it is said, give off the greatest amount of dust.([a])

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[a] Annual Report of the Chief Inspector of Factories and Workshops for the Year 1904, p. 13.

A similar inquiry was made into the health of persons employed at other grain elevators, and although some of the work people had been at work there for many years, they made no serious complaint of having suffered as the result of exposure to grain dust. The report includes a descriptive account of a grain elevator at Leeds by the local inspector of the department, who remarks that—

> The most perfectly equipped place I have seen is in Leeds, in a warehouse or grain-cleaning factory, belonging to, but not connected with, a large flour mill. It is situated on the side of the river and the grain is conveyed direct from the boats into the factory by means of an elevator. The grain is carried by the elevator to the weighing machine, then it passes through a cleaning machine, where the dust and all dirt, soil, bits of stick or hemp, etc., are extracted, the dust being drawn by fans into one receptacle and the other rubbish into another. It afterwards passes up to the silos in wooden pipes. Everything is covered in, so that from the time grain enters the mouth of the elevator to the time it reaches the silo it is never exposed. The only dust that escapes is just round the weighing and cleaning machines, as some of these joints and connections can not be perfectly dust tight, but as the processes are automatic it is not necessary for any man to be constantly present to attend to the work. From the silos, which are completely covered in, the grain runs down into sacks at the bottom, when required to be taken to the mill. Satisfactory as this may be inside, there are those men in the boats, engaged in shoveling the grain towards the mouth of the elevator, who are in the midst of clouds of dust all the time.(a)

Here, again, the general conclusions were to the effect that the employment had not been observed to be decidedly injurious to health, and these conclusions were confirmed by the local inspector for Newcastle-upon-Tyne, who, after stating that most of the work at granaries was of an intermittent character, so that the men were only for brief periods exposed to the dust, further stated that he had not observed any evidence of injury to health, but ascertained that the opinion of the men was to the effect that the dust from American grain was considered more objectionable than that from Hungarian and Egyptian grains, the American grain being said to contain sharp particles of husk which, it was alleged, had a very irritating effect on the respiratory passages.

The subject is further considered in the Annual Report of the Chief Inspector of Factories and Workshops for the year 1906, who, referring to a special report by one of the local inspectors for East London, states that it has been found that an ordinary handkerchief tied over the nostrils and mouth is a much better protection than respirators, for the latter become speedily choked with dust and

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[a] Annual Report of the Chief Inspector of Factories and Workshops for the Year 1904, p. 111.

breathing becomes most difficult. This inspector stated further that—

> At two large dockside granaries bucket elevators were chiefly used at one and band conveyors at the other, the dust generated being worse in the latter case, escaping chiefly where the corn leaves the shoots and falls on to the band. In both these cases respirators were provided for the men, who absolutely refused to use them. In the process of turning over the corn to prevent heating, and shovelling it into the shoots from the sides of the bins, the men work in a cloud of dust. If the bins were made funnel-shaped this latter process might in many cases be dispensed with, but more space would be required. The composition and amount of dust in corn of course varies considerably; some appears to be all husks and some all dried mud. I saw the dust collected from an average quality of foreign barley that had been screened with a machine fitted with a fan flued to a dust chamber. This measured one sack of dust per hundred sacks of corn, and in addition to this there was the dust that escaped and other heavy foreign matter sieved from the corn.(a)

While the evidence as to the quantity of dust generated in connection with the various processes was entirely conclusive, it was, to the contrary, inconclusive as to the health-injurious effects upon the men employed. No doubt the deliberate policy on the part of the local factory inspectors to reduce the dust nuisance in English granaries to a minimum has been decidedly beneficial, and conditions in that respect are not only much better now than they were in former years, but they are also possibly better and more satisfactory than in the large terminal elevators and cargo-loading plants in the United States.

The only available vital statistics of grain handlers and grain elevator employees in the United States are the recorded industrial mortality data, including, however, only 24 deaths from all causes, of which 5, or 20.8 per cent, were from consumption. If the deaths from consumption and from other respiratory diseases are combined, 25 per cent of the mortality of grain handlers and grain elevator men was from diseases of the lungs and air passages. The number of deaths of men in this occupation included in this analysis is not sufficient for a final conclusion, but it is suggestive of health-injurious circumstances destructive to life and health. The facts in detail are brought out in a tabular presentation of the proportionate mortality from this disease by divisional periods of life.

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[a] Annual Report of the Chief Inspector of Factories and Workshops for the year 1906, p. 16.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG GRAIN HANDLERS AND ELEVATOR MEN, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for grain handlers and elevator men from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of grain handlers and elevator men, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Grain handlers and elevator men.	Males in registration area, 1900 to 1906.
15 to 24 years	1	....	....	27.8
25 to 34 years	7	1	14.3	31.3
35 to 44 years	5	2	40.0	23.6
45 to 54 years	7	1	14.3	15.0
55 to 64 years	2	....	....	8.1
65 years and over	2	1	50.0	2.7
Total	24	5	20.8	14.8

For the time being the conclusions regarding the health-injurious effects of exposure to grain dust rest almost entirely upon recorded, and fairly competent medical observations. These observations are, in part, confirmed by the available recorded industrial mortality experience. It is much to be desired, however, that the matter should be made the subject of a thorough and qualified scientific inquiry in the Lake and Atlantic ports, where the largest number of grain elevator men and grain handlers are employed.

FLOUR MILLING.

The flour-milling industry in the United States, including gristmill products, employed in 1905 nearly 40,000 wage-earners, of whom 450 were women. Since the manufacturing census is limited to establishments of a certain size and excludes custom gristmills, the product of which is consumed in the immediate vicinity, and which is, therefore, considered a neighborhood industry, the actual number of wage-earners employed in connection with flour and grist mills is probably not far from 50,000. The census of occupations, 1900, enumerated 40,576 millers, of whom 34,567 were native born and 6,009 were foreign born. Although the number of mills throughout the country is very large, a comparatively small number of mills grind a comparatively large percentage of the wheat ground in the United States. While wheat flour is the chief product, considerable quantities of rye, buckwheat, barley, corn, and other grains are made into flour; this, however, proportionately is insignificant, compared with the enormous extent of wheat-flour milling in the United States. The distinction between custom mills and merchant mills is a very important one, since the exposure to flour dust is much greater in the former establishments than in the latter, chiefly operating by the patent-roller process. Out of 25,258 flour mills enumerated by the census of manufactures of 1900, 2,620 were merchant mills, 14,905 were custom or exchange mills, and 7,733 combined both methods.

The essential differences in methods of flour milling are briefly described in the census of manufactures, 1900, from which the following is quoted:

> There are three distinct types of grinding machines used for reducing cereal grains to a powder. First, the mortar-and-pestle type, in which grinding and rubbing are the chief forces of impact employed. Second, some form of machine presenting two roughened surfaces, one or both of which may be in motion (usually only one), between which the grain is crushed or cut. These roughened surfaces may be either of stone or hardened steel. Third, the roller system of milling, illustrating the mashing process, in which the grains are disintegrated and reduced to successive stages of subdivision by passing through rolls, smooth or corrugated, in which, from one series to another, there is an increasing approximation of the surfaces.
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> These represent ascending types in the art of milling. The first represents the primitive and original method of disintegrating the grains; the second the intermediate step, which persisted until within perhaps a quarter of a century; and the third and last and final step in the evolution of the art. The third method is now almost universally employed, especially in mills of any magnitude.([a])

Of these methods the last named has become the most important, although a large number of custom flour and grist mills continue to operate. These, as a rule, run only for a portion of the year and employment therein is more or less intermittent, and often the duties are performed in connection with farm labor or similar work. The patent-roller process has eliminated to a large extent the dust nuisance common in the old-style flour mill, and while the process is rather involved and difficult of exact description, the following observations from an extended account of the industry will prove useful for the purpose of emphasizing the degree of dust exposure in the different employments:

> The roller mill consists of a frame carrying two pairs of steel rolls, one roll of each pair being revolved in a direction opposite to the other. The rolls run at different speeds by means of differential belts. The prepared grain is fed between the rolls, striking the slow rolls first, and is then cut by the fast roll, so as to shell out the contents. The broken kernel is then elevated to a sieve machine called a "scalper," which consists of a flatwise sieve, which allows the granular material, which is called "middlings," to pass through the meshes, while the coarser part of the kernel passes over the sieve to

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 370.

the second set of rolls. This process is repeated five times (the grinding and sifting operations).

The next process is the dividing of the middlings into various grades according to the size of the granules. The middlings from these five siftings are delivered to a grader, which may be either a reel or a sifter machine. These grading reels are covered with silk bolting cloth of various degrees of fineness, the finest section being near the head of the reel, and graduated toward the tail of the reel. It is a mistake to suppose that these grades differ in value; they relate entirely to size. Each grade of middlings is now put through a machine termed a middlings purifier. The introduction of this machine has revolutionized the practice of milling. The stock is fed in at one end of the sieve, and is advanced by the end motion of the sieve, which is covered with silk bolting cloth. A current of air is drawn up through the sieve by a fan located in the upper part of the machine; this carries off any fine dust into the dust collector, where it settles. The dust collector consists of some form of cloth tubes. The air forces the dust to the walls of the tubes and passes through the mesh, leaving the dust on the inside.

The particles of bran that are with the middlings whose specific gravity is less than the interior of the kernel are kept from going through the meshes by the upward current. The bran is held in suspension until the end of the sieve is reached, when the air current is cut off, allowing it to fall into a separate conveyor. The purified stock which passed through the sieve is delivered by means of conveyors to a second purifier, whose action is the same; brushes moving at right angles to the motion of the sieve serve to keep the meshes of the cloth open. Each grade of middlings goes through the same process of purification. After the middlings are thoroughly purified, they go to the smooth rolls, where they are partially crushed, but not powdered. The life of the flour is killed if it is pulverized. From there it goes to the bolter, which is made in many forms, but for purposes of illustration we will consider a round reel or "flour dresser," as it is called. The reel is covered with fine silk bolting cloth, which may cost as much as $4 a yard. What flour is fine enough to go through the meshes of this reel is sent to the flour bins, and is ready for packing. What is too coarse to go through goes to the rolls and is recrushed and rebolted, and this process is repeated until all the middlings are crushed fine enough to go through the meshes of the cloth. The bolting cloth is kept free from clogging by a revolving brush, and the stock is thrown against the inner side of the cloth by beaters revolving around a horizontal shaft.

The flour is now ready for packing in barrels of 196 pounds and bags which range from 3 to 280 pounds. The barrels are placed on a machine located beneath the bin, and adapted to supply a large volume of flour, which will approximately fill the barrel; the supply is automatically cut off when the proper weight is reached. ([a])

The foregoing processes require the employment of a widely diversified group of wage-earners, classified by the bureau of labor statistics of Minnesota into head millers, second millers, grinders, bolters, stone dressers, flour packers, bran packers, nailers, flour counters, oilers, sweepers, dust-house cleaners, elevator foremen, millwrights, machinists, engineers, electricians, storehouse men, warehousemen, and common laborers. The degree of dust exposure differs naturally and considerably with the various employments, being at its worst in the case of flour packers, bran packers, nailers, flour counters, sweepers, dust-house cleaners, warehousemen, and storehouse men. Grinders and bolters, on account of the fact that most of the modern machinery is completely inclosed, are only slightly exposed to flour dust, but the employment most injurious to health is that of the buhrstone dressers, who are exposed not only to the inhalation of flour dust—since the stones are dressed in the mill—but also to a considerable and continuous inhalation of mineral and metallic dust.

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[a] Scientific American, February 27, 1904, p. 177.

In most of the modern mills the dust house has been eliminated and an automatic dust collector is used instead, the dust from each machine being gathered in a pipe and carried to some one of these collectors, whence it is automatically conveyed to a central collector, from which it is blown into a tube and forced out of the mill into the river. This has made the employment of dust-house cleaner almost obsolete.

The earliest recorded observations regarding the health of flour millers are by Ramazzini, who, writing in 1670, held that:

> In the first place those who bolt the flour and cleanse it from the bran, and are always shaking and turning the sacks and bags, can not possibly so cover their face as to avoid the inspiration of the flying particles of the meal, together with the air; and these being fermented with the salivary juice, stuff up not only the throat, but the stomach and the lungs with a tough paste; by which means they become liable to coughs, shortness of breath, hoarseness, and at last to asthmas; the wind pipe and the passages in the lungs being lined with a crust that interrupts the intercourse of the air.([a])

Ramazzini also considered the most effectual means of preserving the health of flour millers, chiefly, of course, with reference to protection against the inhalation of flour dust, and he gives his indorsement to the custom of tying a linen cloth over part of the face, which then prevailed, but even this, he held, was not entirely sufficient to prevent the inhalation of flour dust.

Thackrah, writing in 1832, took an equally serious view of the employment, as one more or less detrimental to health and life, pointing out in his treatise on the effects of trades and professions on health and longevity that—

> Corn millers, breathing an atmosphere loaded with the particles of flour, suffer considerably. The mills, indeed, are necessarily exposed to the air,—the number of men is comparatively small, and the labor is good. Yet millers are generally pale and sickly; most

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[a] Treatise of the Diseases of Tradesmen, Ramazzini, English edition of 1705, p. 143.

have the appetite defective, or labor under indigestion; many are annoyed with morning cough and expectoration; and some are asthmatic at an early age. The average circumference of the chest in ten men, whom we measured, was 36 and 2-5ths inches; and the quantity of air thrown out by a full expiration was somewhat less than 202 cubic inches. Though we found several who had borne the employ from boyhood to the age of 50 or 60, the individuals were by no means robust; and we could not find an instance of an aged and healthy miller. The preceding statements do not apply to the men who drive the corn and flour carts, nor to the porters who unload the grain. These persons are little exposed to dust, labor chiefly in the open air, and are generally selected for their muscular power. They are, however, like other men who carry great weights, subject to hernia. (a)

Thackrah concludes his remarks with some additional observations as to the habits of the workmen and the surrounding circumstances of their employment, and, after observing that night work did not seem to affect sensibly the health of the workmen, remarked that—

The evils of the employ might be much reduced by the men's taking exercise in the open air. It is apparent that those who work from 12 to 12 have time to enjoy a pure atmosphere for several hours a day. In this, as well as other employments, we remark with regret the men's inattention to health, their indifference to the prevention of disease. They think nothing of injurious agents till their health is destroyed, and the time for prevention is passed. The dust might, I conceive, be removed, or greatly diminished, by a current of air under the floor. The ill effects on hearing, of this and other noisy occupations, might be lessened or prevented by putting cotton in the ear passages. (a)

The observations of Ramazzini and Thackrah were confirmed by the more scientific investigations of Hirt, who quoted statistical data to the effect that out of 100 cases of sickness among flour millers there were about 42 due to acute or chronic respiratory diseases, and of these phthisis caused 10.9 per cent, and emphysema 1.5 per cent, bronchial catarrh 9.3 per cent, and pneumonia 20.3 per cent. He attributes the very considerable proportion of sickness from pneumonia to the exposure of flour millers to changes of temperature, cold drafts, etc., in conjunction, of course, with exposure to flour dust. While the number of cases of sickness from respiratory diseases was relatively high among flour millers, the actual mortality, as observed by Hirt, was not materially in excess.

In a lecture before the Society of Arts, in 1876, it was observed, with regard to the health-injurious circumstances of flour milling, that—

Flour dust is another of the obstructive as well as irritative dusts, and men who work in flour mills afford, I think, the most striking

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[a] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, pp. 63, 64.

illustrations of obstruction of breathing from the inhalation of minute particles of solid matter. The particles of flour produce comparatively but little irritation, but they are carried readily into the bronchial tracts through the minute ramifications of the bronchial surface, and render the breathing irregular through parts of the lung. Thus an irregular pressure of the inspired air is brought about, an undue pressure is exercised upon some portion of the lung structure, there is rupture or break of the minute vesicular structure, and therewith the development of that disease of the lung which is technically called emphysema. The symptoms attendant on this condition are those of suffocative breathing and spasmodic cough. They constitute the disease commonly called "miller's asthma."([a])

The material changes in methods of manufacture make some of the earlier observations by writers on occupation diseases inapplicable to the occupation at the present time. Arlidge, writing with special reference to employment in modern flour mills, makes the statement that—

> Flour mills have had a bad reputation so far as the health of millers is concerned; and the most dismal accounts of their attendant evils are to be read in old and in foreign writers on industrial diseases. It would serve no useful purpose to repeat those accounts, especially as our endeavor is primarily to represent the present hygiene of trades in our land, and as the milling business has, within comparatively few years, been transformed by the introduction of steel rollers in the place of the old millstones, and of marvelously contrived automatic machines, scarcely requiring the interposition of human hands from the beginning to the termination of the whole process of making flour. By these machines the separation of the bran, the "germs," and the semolina is effected, and necessary siftings are carried on in inclosed box-like constructions, whereby the escape of dust into the surrounding air is obviated. Nevertheless, as the miller requires from time to time to withdraw samples for testing, and to remove special products, one section or other has to be opened, with the emission of a slight quantity of the pulverized corn. Hence, although a modern corn mill contrasts strongly with one of olden time, it does not entirely cease to be a dust producer, and the flour makes itself visible on the clothes of the millers, as well as on surrounding objects. After the lapse of years it also produces shortness of breath, with cough and expectoration. Happily the grains of flour are readily miscible with fluid, and therefore are, to a very great extent, arrested in their passage into the lungs themselves by the fluids of the mouth and nasal openings with which they get mixed, in the form of semi-fluid pasty matter, and thereupon excite efforts, and usually successful ones, to remove them. In the same manner, should they reach the bronchial tubes, their miscibility with the secretions prepares the way for their expectoration.
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> However, we can well understand that exposure to flour dust for lengthened periods will end in some accumulations in the form of tenacious plugs, provocative of severe paroxysmal efforts to dislodge

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[a] Lecture on "Unhealthy trades," by Dr. B. W. Richardson, Scientific American Supplement, March 4, 1876, p. 155.

them by coughing; and, such efforts failing, remain to block tubes, with the result of causing, on the one hand, collapse of a small area or atalectasis; and, on the other, of emphysematous dilatation of an adjoining area, by reason of increased work and pressure upon its air cells.

There is undoubtedly but very slight irritation induced by grains of flour; nevertheless these can not fail, as foreign material, to exercise some excitation, sufficient, possibly, to set up after a while subinflammatory action. In old mills the men had to contend not only with grains of flour but also with the far more irritating particles of bran and of hair or bristles attaching to the corn, thrown off in the sifting operations; and by the action of which the lung parenchyma and air tubes were more seriously affected. Necessarily the proportion of these hard epidermic particles differed according as oats, barley, rye, or wheat was ground. It would appear that the worst asthmatic attacks are due to the dust of oats. Where men have been exposed to the inhalation of the coarser fragments derived from the epidermic appendages of corn the sputum has borne witness to their presence.([a])

With reference to men employed in buhrstone cutting, Arlidge was of the opinion that—

The siliceous dust from the wear of the millstones was another injurious element that formerly intermingled with the flour, but has ceased to exist by reason of the adoption of steel rollers for grinding corn, and it seems unlikely that it could ever be one of importance.([a])

Arlidge also quotes from the factory inspector's report for 1884 evidence to the effect that "it is quite exceptional to see a person who has worked any time in a flour mill who is not more or less affected as to the respiratory organs; and, contrary to the rule in most trades, the majority readily admit and deplore the fact." Arlidge, however, believed that this statement, in the light of his own investigations, including the personal inspection of mills erected and fitted under the most approved modern system, did not apply at the present time, in view of the great improvements made in all the details of the occupation.

The general conclusions of Arlidge are finally summed up, as follows:

Remembering that a modern mill is always four or five stories high, and each floor well-nigh filled with machinery, it is evidently a place of danger, and too frequently of accidents in connection with the shafts, belting, and wheels, though to a less extent than formerly. Moreover, flour mills are hazardous owing to their liability to fire and explosions; originating in the extremely fine dust diffused through the atmosphere, which, if accumulated above a certain measure, explodes on contact with flame; just as happens with fine coal dust in mines. Many explosions have occurred in this country, wrecking the mills and destroying life. To obviate this disaster, care is usually taken to inclose the flames of gaslights as far as practicable; whilst in other establishments electricity is introduced as the illuminating agent. But here, as happens with so many evils, prevention by thorough ventilation is the best cure.([a])

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[a] Diseases of Occupations, by J. T. Arlidge, 1892, pp. 383, 384.

Flour milling was briefly considered by Dr. Jacques Bertillon in his address on "Morbidity and mortality," including references to the observed mortality rate in various European countries, in part as follows:

> Millers in England have a rather low mortality up to the age of 45 years, and a rather high one afterwards; the same occurs in Switzerland, the increase there taking place about 40. Phthisis is rare among them, as amongst other country folk, up to 30, average from 30 to 40, then fairly frequent. The Italian tables attribute to the millers, etc., a low morbidity up to 45, and a high one from 45 to 50.([b])

As evidence of a further improvement in the conditions affecting the health of men employed in modern flour mills, reference may be made to the Report of the Chief Inspector of Factories and Workshops of Great Britain for 1900, in which the district inspector for the northwestern division states:

> At eleven [flour mills] visited, four of which are very large mills, the general conditions were excellent, having regard to the nature of the processes and the number of hands (very few) engaged therein; and taking the larger works as representative of the various processes of milling flour, it was noted that there was practically no dust in those departments where it is most likely to abound, viz., in the preparing and cleaning of corn, previous to its grinding. This is directly attributable to the conditions under which the process is carried on. A strong blast of air is drawn by centrifugal fans into either a "cleaner," a "separator," or a "brusher," or similar machine (English and American made), and there meets with and cleanses the grain from foreign matter and dust, and carries these with it along a suitable duct to a collector. Thus the one agent not only separates the dust, but, by its mode of application, also carries away the dust it creates and prevents it being given off into the works. This is a type on which I venture to think dust preventing systems can well be modeled with certainty of successful result. In such a system the fan power required is considerable; with the flour miller it is a necessary item. In other dusty processes it may unfortunately be an addition to working expenses without a corresponding monetary return.([c])

The foregoing observations and conclusions were fully confirmed by the inquiries made by the departmental committee appointed to inquire into and report on certain miscellaneous dangerous trades, which considered flour milling at considerable length. It pointed out that the occupation in former years had been so injurious that even twenty years previous friendly societies would not accept operative millers as members, but that no objection to such membership was now heard of. The suggestions made by the committee as to further improvements were chiefly with regard to the wheat-cleaning department, and the committee included a recommendation that a fan should be attached to all grinding machinery, whether stones or rollers, and that the exhaust from all friction machines should be into the open air. It was further recommended that all dust should be blown into sacks instead of dust chambers, required to be cleaned out periodically, and that the cleaning out of these chambers when in use should be done only when the machinery was brought to a standstill. Among the observations of the committee the following is of particular interest, and is quoted in full:

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[a] Diseases of Occupations, by J. T. Arlidge, 1892, p. 386.

[b] Journal of the Royal Statistical Society, 1892, p. 579.

[c] Annual Report of the Chief Inspector of Factories and Workshops for the year 1900, p. 302.

> In modern mills, the wheat cleaning machinery and the rollers where the milling is performed are both covered over, and the former machinery is almost universally provided with fans and dust chambers. It is important that the pipes connected with the fan should be cleaned out periodically. Where there is no fan or where that which has been provided is not in proper working order there is great danger to the workers in the wheat-cleaning department. It has been represented to the committee that the dust is very heavy and gritty, and that men do not last long who have to work in it.
>
> Of other dusty processes the most important is sack cleaning; here beating in some form is required, and dust is necessarily produced. The methods adopted for removing the dust vary very much according to local conditions; access to the open air is not always possible, nor is a fan in all instances capable of satisfactory application.
>
> For sack filling, another operation where there is a liability to injury from dust, the committee have seen a useful mechanical contrivance called a sack jumper. The mouth of the sack is closely bound round the bottom of the feeder or hopper, and by means of a lever at some distance the sack can be jumped up and down, thus causing the flour to fill the bag in a compressed instead of in a loose form. The workman is enabled by this means to stand at a distance from the hopper where the filling takes place, and consequently to escape much of the dust which otherwise he would risk inhaling. ([a])

To the foregoing is added, in conclusion, the remarks of Dr. Thomas Oliver, published in his treatise on Dangerous Trades in 1902:

> Flour milling as conducted in this country a few decades ago was, despite the fact that most of the mills were situated in the country, an unhealthy industry. Flour millers died from pulmonary consumption and chest diseases in a larger proportion than men engaged in other trades in the same district. The average life of a miller was said to be forty-three years. Hirt compiled tables of the comparative sickness of millers and bakers, and he showed that while

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[a] Final Report of the Departmental Committee on Dangerous Trades, 1899, p. 22.

of one hundred bakers seven died from pulmonary phthisis, out of the same number of millers the deaths were ten. Bakers and millers seemed to him to be about equally predisposed to emphysema of the lungs, but as regards pneumonia the mortality figure for bakers was 8.4 per cent as against 42 per cent for millers. These statistics are taken from a German source, and it is difficult to explain the very heavy mortality rate from pneumonia in millers compared with that of bakers.

Until within thirty years ago all the wheat and oats in this country were ground between revolving stones. During the grinding a considerable amount of fine dust was given off, the continual inhalation of which was held responsible for much of the ill-health of the operatives. So unhealthy was the occupation of milling believed to be twenty years ago, that friendly societies would not accept operative millers as members. Today no objection is raised. In addition to injury to health from breathing the dust-laden atmosphere, there was a risk from fire owing to the highly explosive character of the dust. While danger to life from explosions in flour mills still to some extent prevails, both it and the risk to health from inhalation of the dust have materially diminished. There is the widest divergence possible between the old and the new methods of milling. The introduction of the steam roller system of milling from Buda-Pesth, and the fact that nearly all the various processes are carried on inside closed machinery, have cleared the atmosphere of modern flour mills and converted what was admittedly a dangerous trade into one that compares very favorably with most occupations. Wherever the old method of milling is still carried on the atmosphere is found laden with a very fine dust, mostly flour. This with each inspiration is drawn into the bronchial tubes of the miller, and forms plugs with the mucus secreted by these passages. The plugs, owing to their tenacity, are dislodged with difficulty. It is not contended that the flour itself reaches the lungs; probably the whole, or at any rate the most of it, becomes entangled in the mucus of the smallest bronchial tubes, but in the dust there are other things than flour present, e. g., portions of the husks of harder grain than wheat, portions of hairs of oats, bristles of rye, and particles of mineral from the grinding stones, so that through one thing and another, and in consequence of the repeated bronchial irritation and the cough caused by respiring the dust-laden air, a strain is imposed upon the lungs that leads to overdistention of the air cells, or what is known as pulmonary emphysema. That portions of bristles, etc., are capable of being inhaled into the deeper recesses of the respiratory passages is shown by the presence of these bristles on microscopical examination of the expectoration that has been discharged after hard coughing.

In modern flour mills the dangers that operatives are exposed to are: (1) Those incidental to the machinery; (2) fire and explosions; and (3) inhalation of dust. It is with the latter that we are here most concerned. The cleaning of wheat is a dusty process, but it is usually carried on within inclosed machinery, and so long as this and all the covered-in spaces are provided with fans that are kept in good order, and the pipes leading away from these to the dust chambers are kept patent, the workmen do not seem to incur any great risk to health. Attention, however, must be given to keeping the suction pipes clean and the fans in good order, otherwise, as cleaning is a very dirty process, the men would assuredly suffer in their chest. Once the wheat has been cleaned and brushed or washed, it is put through the rollers and is milled into flour. This consists of not one but many processes, all of which are conducted in inclosed chambers, the product at each particular stage being lifted and carried onward by self-regulating machinery and elevators from one part of the mill to another. Where the fittings of the machinery are good, no dust practically escapes. Hence it is that flour milling has ceased to be the harmful industry it formerly was. In filling the sacks with flour, and in cleaning returned sacks, there is often a considerable amount of dust given off, but mechanical contrivances are now in operation that greatly minimize the amount of dust, so that this particular operation too has become less dangerous than it once was.(a)

The number of male flour millers 15 years of age and over in the United States, according to the census report on occupations, 1900, was 40,182, and of this number 3,050, or 7.6 per cent, were 65 years and over, which compares with 4.7 per cent for the entire occupied male population of the continental United States. At ages 55 to 64 the proportion was 12.1 per cent, at 45 to 54 it was 19.1 per cent, leaving 61.2 per cent at ages 15 to 44, inclusive. The higher proportion of millers at advanced ages would indicate that, on the whole, the conditions favorable to life and health in this occupation, as it is now carried on in the United States, are probably satisfactory. It must be kept in mind, of course, that these numbers apply to millers as a class, and do not distinguish between the two important divisions; that is, those employed at custom flour and grist mills, and those employed at the patent-roller process. It is also not quite clear from the census statistics whether the occupation classification was strictly limited to millers, as such, or whether it was not made to include a number of connected employments, but with a much less degree of exposure to flour dust than in the case of millers, properly to be classified as such. With increasing complexity in industrial activity, an exact occupation classification becomes more difficult.

The occupation was briefly considered in the vital statistics of the census of 1900. The number of millers reported in the registration States was 6,044, among whom there occurred 161 deaths, or at the rate of 26.6 per 1,000. By specified periods of life, the death rate at ages 15 to 24 was 5.8, at ages 25 to 44 it was 10.5, at ages 45 to 64 it was 15.6, and at ages 65 and over, 164.9. The mortality from all causes was higher among millers at all ages than among manufacturing and mechanical employments generally, but the mortality from consumption was below the average, or 1.99 per 1,000, compared with 2.6 for the manufacturing and mechanical industry class. The mortality from pneumonia was 2.98 per 1,000, or very materially in excess of the general average of 1.4 per 1,000 for the manufacturing and mechanical industry class. Unfortunately, the census returns do not give the causes of death by divisional periods of life, and it is, therefore, impossible to state how far the excess in the mortality from pneumonia may possibly have been the result of an age distribution favorable to a high general death rate from this particular disease.

(a) Dangerous Trades, by Thomas Oliver, 1902, pp. 505–507.

The Rhode Island vital statistics of millers for the period of 1852 to 1906 include 54 deaths from all causes, of which 10, or 18.5 per cent, were from consumption. During the ten-year period ending with 1906 there occurred 14 deaths of millers, and of this number only 2 deaths, or 14.3 per cent, were from consumption, while 2 other deaths were from bronchitis, a total of 28.6 per cent of the mortality having been from diseases of the lungs and air passages.

The most recent English vital statistics of millers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part as follows:

> At ages 15 to 20 years millers experienced a mortality which is less than half that of occupied and retired males; with advancing years, however, this advantage gradually disappears, until after age 35 the rates differ little from the standard. In the main working time of life the comparative mortality figure is 890, or 11 per cent below the average. Millers suffer a slight excess of mortality from cancer as well as from respiratory diseases, from Bright's disease and from suicide; but under every other heading, except gout, their mortality is less than the standard, the difference being especially marked under the headings alcoholism and liver disease, phthisis, and diseases of the nervous system. ([a])

The foregoing observations in a measure confirm the corresponding American vital statistics, except as to the comparatively low degree of consumption frequency and the higher mortality from respiratory diseases. It is to be kept in mind, of course, in all inquiries of this kind that the medical classification of deaths is far from perfect, and there is no doubt that deaths are frequently recorded as having been due to respiratory diseases which were, in fact, the result of tubercular lesions, or at least were seriously complicated by such lesions. A comparatively high mortality from respiratory diseases among men employed continuously in a dust-laden atmosphere may, therefore, be considered as of equal significance as a high mortality from tubercular diseases. In the table which follows a comparison is made of the English mortality of millers from all causes with that of occupied males generally:

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[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxi.

MORTALITY FROM ALL CAUSES AMONG **MILLERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for millers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.13	−1.31	46
20 to 24 years	4.41	2.94	−1.47	67
25 to 34 years	6.01	3.61	−2.40	60
35 to 44 years	10.22	9.05	−1.22	88
45 to 54 years	17.73	17.25	− .48	97
55 to 64 years	31.01	32.23	+1.22	104
65 years and over	88.39	98.23	+9.84	111

The mortality of English millers up to and including 54 years of age is shown by the preceding table to have been below the average for all occupied males during the period under consideration. When, however, the comparison is limited to the mortality from consumption and from other respiratory diseases, it is brought out that there is an excess in the mortality from the former disease at ages 65 and over, and an excess in the mortality from the latter at ages 35 and over. The facts, as far as they are obtainable from the published reports, are set forth in tabular form below, which shows the mortality by divisional periods of life from consumption and from respiratory diseases other than consumption among millers and among occupied males generally, first, from consumption, and second, from other respiratory diseases:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **MILLERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for millers.			Death rate per 1,000 for all occupied males.	Death rate for millers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	.014	−0.40	26	0.24	0.14	− 0.10	58
20 to 24 years	1.55	.82	− .73	53	.48	.47	− .01	98
25 to 34 years	2.03	.86	−1.17	42	.77	.73	− .04	95
35 to 44 years	2.74	2.41	− .33	88	1.66	2.06	+ .40	124
45 to 54 years	3.04	2.16	− .88	71	3.32	4.13	+ .81	124
55 to 64 years	2.16	2.05	− .11	95	6.54	8.64	+ 2.10	132
65 years and over	1.11	2.18	+1.07	196	17.77	29.66	+11.89	167

The foregoing comparison shows that the mortality from consumption was excessive by 96 per cent at ages 65 and over, and that the mortality from respiratory diseases was excessive by 24 per cent at ages 35 to 54, by 32 per cent at ages 55 to 64, and by 67 per cent at ages 65 and over. The excess in the mortality at these ages from respiratory diseases is decidedly significant. This excess is confirmed by the corresponding statistics of Scotland, which also exhibit a high death rate from all causes at ages 45 and over and a considerable excess in the proportion of deaths from respiratory diseases at all ages. Out of 102 deaths of millers at ages 25 to 64 the proportion of deaths from consumption was 10.8 per cent, from bronchitis 12.7 per cent, from pneumonia 8.8 per cent, and from other respiratory diseases 2.0 per cent, a total of 34.3 per cent of deaths from diseases of the lungs and air passages.

Some very interesting vital statistics of millers have been made public for Switzerland for the period 1879 to 1890. Since in that country the patent-roller process has not made the progress which it has in England and in the United States, the exposure of the operatives is much greater to the inhalation of fine flour dust. The statistics of Switzerland are set forth in tabular form, as follows, exhibiting the mortality of millers from consumption:

MORTALITY FROM CONSUMPTION AMONG MILLERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[Figures from Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for millers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	1.30	1.23	−0.07	95
20 to 29 years	3.04	1.42	−1.62	47
30 to 39 years	3.66	3.02	−0.64	82
40 to 49 years	3.65	5.18	+1.53	142
50 to 59 years	3.52	6.49	+2.97	184
60 to 69 years	3.25	5.47	+2.22	168
70 years and over	1.84	7.11	+5.27	386

According to this table, the mortality of millers from consumption was below the average at ages under 40, but materially above the average at all ages 40 and over, the excess having been 42 per cent at ages 40 to 49, 84 per cent at ages 50 to 59, 68 per cent at ages 60 to 69, and 286 per cent at ages 70 and over. In a comparison of this kind, the material differences in the social and economic conditions of labor must, of course, be taken into account, and the vast differences in the mortality resulting from the important factors of race, nationality, climate, etc., but when these factors are allowed for, and with a due regard for what is generally known of the mortality of Switzerland, the excess in the death rate from consumption among flour millers is very significant, and, in all probability, the direct result of the occupation.

The recorded industrial insurance mortality statistics of millers include 256 deaths from all causes, of which 40, or 15.6 per cent, were from consumption. Of the mortality of millers from respiratory diseases other than consumption, 29 deaths were from pneumonia, 7 from asthma, 4 from bronchitis, and 1 from other respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, 31.6 per cent of the mortality of millers was from diseases of the lungs and air passages. The number of deaths of millers under consideration is sufficiently large and fully representative of this occupation in the United States. The excess in the consumption death rate of millers is more clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. While the consumption mortality was excessive at all ages under 65, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths of millers from all causes 87.5 were from consumption, against a normal expected proportion of 31.3. Unfortunately, at this period of life the actual number of deaths under consideration is too small for a safe conclusion. The analysis of the consumption mortality of millers in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG MILLERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for millers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of millers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Millers.	Males in registration area, 1900 to 1906.
15 to 24 years	7	2	28.6	27.8
25 to 34 years	8	7	87.5	31.3
35 to 44 years	27	8	29.6	23.6
45 to 54 years	39	11	28.2	15.0
55 to 64 years	64	9	14.1	8.1
65 years and over	111	3	2.7	2.7
Total	256	40	15.6	14.8

The preceding observations and vital statistics of millers are not entirely conclusive, but the evidence is sufficiently convincing to warrant the conclusion that the inhalation of flour dust is injurious to health and that in proportion as the degree of dust inhalation is diminished the health and mortality of the operatives will improve. Perhaps the most conclusive statistics are the recorded industrial insurance experience data, which exhibit a decidedly high proportionate mortality from consumption at the earlier ages. The entire subject requires to be more thoroughly investigated, especially in the cities of the Northwest, where the flour-milling industry is of large proportions; but the introduction of the modern patent-roller process has largely eliminated the most health-injurious factors inherent in the work of the miller of an earlier date.

BAKERS AND CONFECTIONERS.

The census report on occupations for 1900 returned the number of bakers in the United States as 79,407, and the number of confectioners as 31,242, a total of 110,649, including among bakers 4,346 women and among confectioners 9,219. According to the census statistics of manufactures for 1900, the manufacture of bread and other bakery products was carried on in 14,917 establishments, employing 60,271 wage-earners. The rapid progress in the industry is indicated by the fact that the number of wage-earners in bakeries considered as manufacturing establishments increased from 22,488 in 1880 to 38,841 in 1890 and to 60,271 in 1900. Corresponding progress has been made in the manufacture of confectionery. In 1900 there were 4,297 manufacturing establishments, employing 33,583 wage-earners. The average number of employees was 21,274 in 1890 and 9,801 in 1880.

Employment in bakery and confectionery manufacture involves comparatively few objectionable factors, but both the labor and health conditions are, as a rule, unsatisfactory unless subject to rigid factory inspection and sanitary control. The process itself requires no extended explanation to emphasize the conditions more or less injurious to health. The work is chiefly divided into bread or pastry making proper and the subsequent process of baking, and while in the former there is considerable and continuous exposure to dust, in the latter there is exposure to both dust and extremes of temperature. Modern processes of bread making by machinery, and in particular the manufacture of confectionery and crackers, have eliminated to a considerable extent the risk of dust inhalation, since most of the operations are automatic and the hand does not touch the finished product at any stage of the manufacturing process. These improvements, however, do not affect a very large proportion of the men employed in bakeries and in the manufacture of confectionery on a small scale throughout the numerous small towns and villages of the country. The sanitary condition of bake shops has attracted the attention of health authorities for many years, and in many respects there has been a decided improvement as the result of effective provisions of the sanitary codes of large cities. Underground bakehouses have been prohibited and in others sanitary improvements have been introduced, which, combined with rational labor legislation, have materially improved the health conditions under which the work of the baker and the confectioner is carried on at the present time.

The health of bakers within recent years has attracted special attention on account of the enactment in 1897 by the State of New York of a law limiting the hours of work in bakeries to 60 a week, or to not more than 10 in any one day, on the ground that excessive hours of labor in this particular employment were decidedly injurious to health. Chief Judge Parker, in giving the opinion of the court in the case of People *v.* Lochner, quoted from the well-known case of People *v.* Havnor (149 N. Y., 195), involving the constitutionality of the Sunday barber law, and accepted the view expressed by Judge Vann in that case that—

> According to the common judgment of civilized men, public economy requires, for sanitary reasons, a day of general rest from labor, and the day naturally selected is that regarded as sacred by the greatest number of the citizens, as this causes the least inconvenience through interference with business. It is to the interest of the State to have strong, robust, healthy citizens, capable of self-support, of bearing arms, and of adding to the resources of the country. Laws to effect this purpose, by protecting the citizen from overwork and requiring a general day of rest to restore his strength and preserve his health, have an obvious connection with the public welfare.([a])

Considered from this point of view it was largely a question of evidence tending to prove the conditions of labor and life in bakeries sufficiently injurious to health to warrant the drastic extension of the police powers of the State to this particular employment. That the facts bearing upon the health of the employment had been carefully considered by Chief Judge Parker is made evident by his concluding remarks that—

> Again many medical authorities classify workers in bakers' or confectioners' establishments with potters, stonecutters, file grinders, and other workers whose occupation necessitates the inhalation of dust particles, and hence predisposes its members to consumption. The published medical opinions and vital statistics bearing upon that subject standing alone fully justify the section under review as one to protect the health of the employees in such establishments, and it is the duty of this court to assume that the section was framed not only in the light of, but also with full appreciation of the force of the

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[a] Fourth Annual Report of the Commissioner of Labor of New York for the twelve months ended September 30, 1904, p. 118.

medical authority bearing upon the subject—authority which reasonably challenges the attention and stimulates the helpfulness of the philanthropist.([a])

In the opinion rendered by Judge Vann, one of the associate judges of the court of appeals, who concurred in the opinion reached by the chief judge, even more extended consideration is given to the medical aspects of the case and extended quotations are made from the writings of standard authorities on the diseases of occupations. The evidence quoted by Judge Vann fully confirms the view that working in a bakery or candy factory is an unhealthful employment when conducted in disregard of sanitary requirements. Judge Vann laid down an important principle in rendering his opinion, holding that "necessarily in considering the subject we may resort to such sources of information as were open to the legislature;" and, he continues, "vital statistics show that those vocations which require persons to remain for long periods of time in a confined and heated atmosphere filled with some foreign substance, which is inhaled into the lungs, are injurious to health and tend to shorten life." Among these employments he included "bakers and confectioners, who during working hours constantly breathe air filled with the finest dust from flour and sugar," and who, as such, have a tendency to consumption. After quoting from standard authorities, to which subsequent reference will be made, Judge Vann concluded his opinion with the statement that—

> While the mortality among those who breathe air filled with minute particles of flour is less than among those who work in stone, metal or clay, still it seems to be demonstrated that it is greater than in avocations generally. The dust-laden air in a baker's or confectioner's establishment is more benign and less liable to irritate than particles of stone or metal, hence, while bakers are classed with potters, stone masons, file grinders, etc., still they are regarded as less liable to pulmonary disease than other members of the class. The evidence while not uniform leads to the conclusion that the occupation of a baker or confectioner is unhealthy and tends to result in diseases of the respiratory organs.([b])

The earliest writer on the diseases of bakers was Ramazzini, who, in 1670, observed that "in sifting the flour, in kneading it into dough, and in baking that in the oven, they are in all these steps exposed to infinite fatigue and toil, and so brought under the lash of various diseases."([c]) He called attention to the evils of night work, which is practically inseparable from the industry, and which in itself constitutes a menace to health and in all probability a predisposing factor to consumption.

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[a] Fourth Annual Report of the Commissioner of Labor of New York for the twelve months ended September 30, 1904, p. 124.

[b] Idem, p. 129.

[c] Treatise of the Diseases of Tradesmen, Ramazzini, English edition of 1705, p. 143.

Attention was also called by him to a fact which has been brought out by practically every subsequent investigation, that bakers in large cities are not so healthy and long lived as are those in the small towns or in the country. "I have observed," he wrote, "that the bakers of large, populous cities, the inhabitants of which choose rather to buy than to make their own bread, are oftener sick than those of small towns and villages, where almost everyone bakes for themselves."([a])

Thackrah, in his treatise on diseases of occupation, printed in 1832, confirms the observations of Ramazzini, stating that—

> Bakers are generally pale and unhealthy. The temperature in which they are placed is seldom below 80° and often as high as 100°. The heat of the oven is rarely lower than 180°. Bakers are subject to disorders of the stomach, to cough and rheumatism. The two former of these affections arise, I conceive, from the dust which is largely inhaled.([b])

In conclusion Thackrah comments upon the evil consequences of night work, in his opinion as injurious to health as the exposure to dust.

In 1855 an important report on The Laws and Ordonnances in Force in France for the Regulation of Noxious Trades and Occupations, by Dr. Waller Lewis, was published by the British Government, in which the health-injurious consequences of work in bakeries are considered at considerable length. The necessity for sanitary regulation is emphasized, it being pointed out that at that time, generally speaking, bread was made in cellars—narrow, badly ventilated, and impossible to be kept clean; and upon these grounds, it is argued, "it would be very desirable that the influence of authority should hasten to propagate improvements already accomplished in this art." With regard to the health of bakers, it is observed by Doctor Lewis that—

> The profession of baker, known generally as a very unhealthy one, is, however, less so than it has been said to be. The bakers' assistants, divided into "brigadier" who shapes and places in the furnace, into "geindre" who kneads, and into "aide" or assistant, who heats the ovens and helps the principal workmen, are exposed, some to the excessive heat of the furnace, others to the very severe labor of working the dough, and to the dust given off from the flour. The operations of bakers take place at night. And without taking into consideration any influence that a night life may exert on the physical and

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[a] Treatise of the Diseases of Tradesmen, Ramazzini, English edition of 1705, p. 156.

[b] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 133.

> moral constitution of man, an influence reduced to its just proportions by Mr. Turner Thackrah, we can not but acknowledge that there are objections to the great changes of temperature, which must be felt after his work at the oven, or after kneading, by the workman who exposes himself to the morning's cold. Rheumatic affections, and acute inflammations of the chest, are in fact, as Ramazzini had already pointed out, those which most frequently attack bakers. In a report of the Institute of Hamburgh, quoted by Thackrah, it is stated that acute rheumatism attacks one-sixth of the bakers, while it only shows itself in one-fifteenth of the tailors. Everyone also has remarked the pallor so strongly characteristic of bakers' journeymen. It must be attributed particularly to that anæmic condition peculiar to all artisans who live in a very hot atmosphere. This influence, in conjunction with the smell given off by heated paste, doubtless contributes to predispose bakers to dyspepsia, which frequently, also, the habits of drunkenness and disorder, well known to be common to them, determine.([a])

The report cites various authorities more or less conflicting as to the effect of the employment on health. According to one statement, out of 2,800 bakers deceased in ten years only 57 had died of tuberculous affections. While in one cholera epidemic a large number of bakers had died, in another epidemic bakers figured only in a proportion very inferior to that of a number of other professions understood to be much more salubrious than that of baking. Of course, at this early period the statistical evidence was neither trustworthy nor extensive.

There is a discussion of this employment in an article on the "Mortality in trades and professions," published in 1860 in one of the periodicals of the day, from which the following is quoted:

> The baker is subjected to a still greater number of debilitating influences as regards his health than the tailor. In all cases his place of work is in a confined basement, where the oven and the gas contrive to keep the temperature at a tropical point. . . . The air, already foul enough, has yet to be contaminated with the floating flour dust so irritating to the fine air passages of the lungs. In an atmosphere thus deliberately poisoned with the elements of sickness, the journeyman baker is confined ordinarily from 7 o'clock at night until 4 the following morning, and towards the end of the week he is engaged nearly two entire days in succession. Is it surprising that their rate of sickness is dreadful—greater than even that of the tailors? Doctor Guy tells us that no less than thirty-one in the hundred spit blood, and that every other journeyman of the low-priced bakers, who work under still worse conditions, is subjected to this most dangerous disease. We feel convinced that the public can not be aware that they eat their daily bread at the expense of the life-blood of the producers. Parliament has refused to interfere in their behalf, but Lord Shaftesbury has taken up their cause, and we be-

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[a] Report on the Laws and Ordonnances in Force in France for the Regulation of Noxious Trades and Occupations, London, 1855, p. 65.

lieve that ere long the force of public opinion will lead to the abolition of the nightwork, which is at the bottom of the evil. At all events, those who wish to assist in the emancipation of these slaves of civilization will see with pleasure the introduction of the aerated bread, which by the aid of machinery manufactures the loaf in a much more cleanly method than by hand labor, and performs the whole process in less than an hour. The introduction of machinery into this trade will at once cure the evils complained of, which result in the majority of cases from the confined establishments and insufficient means of the master bakers.([a])

The conditions affecting the health and life of men in this employment must necessarily vary with different countries and localities, according to the state of sanitary and labor legislation. If there is, therefore, conflict of opinion between continental, English, and American authorities, the foregoing fact has to be kept in mind in giving due weight to the relative importance of the authorities cited. Hirt, who probably more than any other writer on the diseases of occupation ascertained for himself the actual conditions of labor and life, was inclined to take a more favorable view of the baker's employment than of that of the miller, although the general mortality and disease frequency among the former was greater than among the latter. This difference, however, was chiefly accounted for by the higher degree of frequency in the occurrence of pneumonia among millers, for when phthisis, asthma, and bronchitis are combined the difference in the degree of frequency of these diseases was comparatively slight. Of 100 cases of sickness among bakers, phthisis caused 7 per cent, against 10.9 per cent among millers; asthma caused 1.9 per cent, against 1.5 per cent for millers; bronchitis caused 10.9 per cent, against 9.3 per cent among millers, while pneumonia among bakers caused 8.4 per cent, against 20.3 per cent among millers. Hirt concluded that because of the fact that bakers were more exclusively exposed to flour dust in a very fine form, as contrasted with the more general exposure of millers to grain dust, the liability to phthisis was less, with a corresponding lower mortality from this disease. He was further of the opinion that confectioners were more liable to consumption, the proportions being 11.6 per cent for consumption and 3.3 per cent for asthma, both relatively higher than in the case of bakers. There, however, was a somewhat less liability to bronchitis, or 8.4 per cent, against 10.9 per cent for bakers and 9.3 per cent for millers.

The observations of Hirt were made, of course, at a time when conditions in the industry were very different from what they are at the present day.

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[a] "Mortality in trades and professions," by Andrew Wynter, M. D., published in Curiosities of Civilization, p. 524.

B. W. Richardson took a more serious view of the health-injurious effects of flour dust, using the term "miller's asthma" to emphasize the peculiar effects of flour dust as a predisposing cause of a special form of respiratory afflictions.

In further illustration of the differences in local conditions which require to be taken into account when utilizing the available information regarding the health of persons employed in bakeries and in the making of confectionery, the following remarks are quoted from a course of lectures on public health before the Royal Dublin Society, published in 1874:

> The baker suffers from the entrance of dust into his lungs, but more from the circumstances just named. In Dublin in 1859 his work hours averaged seventeen, beginning on Sunday afternoon about 4 o'clock, and he slept usually on the empty sacks, or in a bedroom over the bakehouse, where the carbonic acid of the air was excessive. For a wonder, Ireland was for once before England in sanitary legislation, as regards the baker, the 1 and 2 Victoria, chapter 28, prohibiting any baking process on Sunday, except the setting of Monday's sponge. Doctor Guy, of King's College, London, described several of the bakehouses in the metropolis as underground, without daylight, pervaded by sulphurous and worse smells, often flooded, and overrun with rats. One was not high enough for a man 5 feet 9 inches to stand erect in. It was no wonder that one-third of the London bakers habitually spat blood. Good example in Scotch towns, and in Belfast, and dignified agitation, procured the Bakehouse Act, 1863, which provides for the frequent cleaning of the premises, a wholesome sleeping room, and the exclusion from work, between 9 p. m. and 5 a. m., of all lads under eighteen. Unfortunately the carrying out of the act is not left to the factory inspectors, and I fear it is much neglected in some towns. The evils of the night work are still deplorable, and if the men took nights alternately in setting the sponge, the other journeymen surely could be spared between the afternoon and four the next morning. Some years ago I found hours in flour mills even more exacting, the dust more hurtful, and there was Sunday labor in those worked by water. Last week one of our newspapers had a letter, signed "A White Slave," which complained that in small confectionery shops the female bakers had to work over thirteen hours daily, and in dark cellars most usually.([a])

Doctor Guy's observations are of particular interest because few English authorities examined into the facts of artisans' diseases during the earlier period with more care and deliberation. He was strongly in favor of substituting machinery for hand work, holding that a kneading machine, even of the rudest construction, not only would produce better bread but would prove of incalculable value in safeguarding the health of the employees. After pointing out the extremely insanitary condition of London bake shops, Doctor Guy observed that "certainly here is a case in which Parliament might depart from established rules and interfere with the course of private business in order to prevent the wholesale sacrifice of human life."

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[a] "Prevention of artisans' diseases," by E. D. Mapother, M. D., Lectures on Public Health, Royal Dublin Society, 1874, p. 142.

In the Insurance Times for September, 1877 (p. 586), there appeared a translation of an article on "Life insurance for bakers," with special reference to German conditions, in which it is stated that—

> There are various circumstances which render a baker's business, as it is carried on at the present day in a large part of Germany, unwholesome and destructive; the mere introduction of machinery would not entirely remove the difficulty. Kneading machines have long been in use in all the larger bakeries, and the unwholesome character of baker's work has not been altered. Flour dust, carrying heavy bags, often weighing more than 200 pounds, the heat of the rooms, and above all the fierce glow from the oven, taken together, are enough to ruin the strongest lungs, sooner or later. Want of sleep is what does bakers as much harm as anything; in many parts of Germany no journeyman is ever able to get, on the average, more than four hours' sleep.

Arlidge, in 1892, considered the employment of bakers and confectioners at considerable length, chiefly, of course, with reference to English conditions, which in the intervening period of time have been improved materially as the result of effective sanitary and factory legislation. Arlidge sums up his conclusions in the following statement, which includes a few references to the statistical researches of Doctor Ogle and others concerning the mortality in these occupations:

> Bakers, confectioners, and pastry cooks represent a body of tradesmen exhibiting hygienic conditions of a common character, the principal of which are: Exposure to heat from the ovens, dust, steam, variations of temperature, in too many instances unhealthy bakehouses, fatiguing movements necessitated where kneading is done by hand, disagreeable emanations from materials used, prolonged hours of work, more or less night work and loss of rest. To these evils of their trade the working bakers often add intemperance and irregular living. My own senses also make me conscious of a disagreeable sickly smell, much like that of heated bones, superadded to the steam and other fumes. There are, in brief, many incidents in the occupation of baking, which reduce vital energy, predispose to lung affections, and shorten life. But we ought to distinguish between master and journeyman bakers. The former are mostly fat and flourishing, whilst the latter are anæmic and sallow, in general appearance worn-out, and in mental features dissatisfied and despondent.[a]

With reference to the mortality of bakers as compared with that of men employed in other industries, and the particular liability to special diseases resulting from the trade, Arlidge wrote as follows:

> The death rate of bakers, pastry cooks and confectioners, although still ruling high, has fallen of late years in a slight degree * * *.

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[a] Diseases of Occupations, by J. T. Arlidge, pp. 144, 145.

That of millers is almost exactly the same. The returns of the causes of mortality point to the abuse of alcoholic drinks by bakers. Deaths by suicide are in a very high ratio, but as regards phthisis and respiratory diseases, these tradesmen do not surpass the average for all males. Doctor Ogle adds: "Judging from the death rates of millers and bakers, the inhalation of flour dust would seem to be innocuous; probably little, if any, of the dust inhaled reaches the lungs." We feel obliged to differ from the learned writer on this point, there being ample evidence of flour entering the pulmonary tissue and setting up chest affections. In the vastly improved construction of flour mills, and by the introduction of automatic machines for grinding corn and separating it from its comparatively waste products, the evils of the miller's trade have been most materially reduced, yet withal not exterminated.

Those who have read the reports on the hygienic state of bakehouses, and the circumstances of labor in them, will not be surprised that the mortality of bakers ranges high. As to the exposure of bakers to flour dust, it is neither considerable in extent nor long in duration. Layet calls attention to the powerful and repeated movements imposed upon the men in kneading bread upon the old system; the forcible bending of the trunk forward, the pressure against the stomach, and the strength of arm called for. These actions, he asserts, cause heart disease and emphysema. Doctor Ogle's table partially bears out this conclusion. Thus, of 629 deaths, cardiac lesions were the cause in 86, or 13.6 per cent, certainly a somewhat high ratio; nevertheless little in excess of that occurring with shoemakers, with whom it equaled 12.4 per cent, although in the case of the latter there is an absence of very strong movements of the arms and trunk, other than those required in the act of stitching. Malgaigne assigned to bakers a high ratio of hernia, and others again speak of a remarkable susceptibility to fevers and epidemics, and to gastro-intestinal disorders. The last-named amount, according to Layet, to 20 per cent of the internal maladies they suffer; whilst in Hirt's experience of 100 cases of sickness among them, 28.2 per cent belonged to the respiratory apparatus. Lastly, Thackrah, really upon the authority of older writers, represents bakers as unusually subjects of rheumatism, an opinion we can not substantiate. Though some, chiefly among master bakers, get fat, the majority of these tradesmen are thin; and it is another prevailing phenomenon among them that they are anæmic. Layet quotes Mayer's statistics of the dimensions and weight of bakers drawn in the conscription in Bavaria, from which it appears that they were nearly at the bottom of the list among workmen taken from active occupations.([a])

In 1892 the New Jersey bureau of labor reported the results of an inquiry into the trade life of bakers, including observations upon 933 bakers, 27.5 per cent of whom had entered the trade at an age below 16 years. Of the total number considered 73.3 per cent were foreign born, which is an important fact always to be kept in mind in considering trade mortality statistics. The effect of race and nativity is often of sufficient importance to invalidate conclusions based upon occupation mortality statistics alone. Of the 933 bakers, only 12, or 1.3 per cent, had attained to an age above 60 years, while only 48, or 5.1 per cent, attained to an age of from 51 to 60 years. The average number of years at work was 16.9, and of the total number under consideration 6.1 per cent were beginning to decline in health. Of those who were reported as declining in health, the number of which was 57, nearly one-half, or 47.4 per cent, gave the cause of decline as general debility, 22.8 per cent as rheumatism, 15.8 per cent as diseases of the throat and lungs (including catarrh), and in only one case was the cause of decline attributed to heat, and in one other case to overstrain. Out of the total number reported upon 74, or 7.9 per cent, had been from 30 to 39 years at work; 20, or 2.1 per cent, 40 to 49 years at work; and only 8, or 0.9 per cent, over 50 years at work. The foregoing statistical data would appear to confirm the general conclusions of medical authorities, but being limited to a single State, and to a comparatively small number of persons employed, the conclusions may not be entirely applicable to the United States as a whole.

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[a] Diseases of Occupations, by J. T. Arlidge, pp. 146, 147.

With characteristic German thoroughness the entire subject was investigated and reported upon by Doctor Zadek, of Berlin, in 1896, who contributed a monograph on the hygiene of millers, bakers, and confectioners to the volume on occupation diseases of Weyl's Handbook of Hygiene, published in 1897. This monograph, with numerous illustrations, emphasizes the health-injurious circumstances of the employment, with special reference to labor conditions, including long hours and night work. The article mentions an elaborate inquiry by the German imperial department of labor statistics, which affords a clear insight into practically every phase of the employment considered as an industrial problem. A wealth of statistical data derived from various sources is considered in the discussion, all of which may be summed up in the statement that the evidence is entirely conclusive that the occupation of baker, unless subject to strict sanitary supervision, is decidedly prejudicial to health. Doctor Zadek refers to the interesting investigations by Fox into the mortality and diseases of the bakers' trade unions of London, including 4,400 members. Out of every 100 deaths from all causes among bakers, 24.4 per cent were from consumption and 36.6 per cent additional were from other diseases of the lungs and from bronchitis. These statistics apparently contradict those of Doctor Ogle, which gave a combined percentage of only 41.5, but it is explained that the records of trades unions are more trustworthy than information derived from general sources, including all employments classified as bakers from owners and masters to apprentices. The investigation by Fox indicates the necessity of extreme caution in accepting general statistics of occupation mortality, which in all probability, and almost invariably, understate the actual facts of industrial diseases and industrial accidents.

Doctor Zadek also confirms the very early observations by Ramazzini that the mortality of bakers was higher in the cities than in the towns and villages. He mentions further that a rule is being enforced in the guilds to accept as apprentices only healthy young men, who first have to undergo a medical examination to determine whether they are adapted to the physical requirements, and if not so adapted they are declined. Doctor Zadek also includes statistical data for the sickness insurance associations of Berlin, proving that among bakers there was relatively much more sickness than among confectioners, there having been among the former 36.5 cases of sickness per 100 members, against 21.2 among the latter. The duration of sickness was 9.1 days for bakers against 4.6 days for confectioners. The statistical evidence, however, is somewhat conflicting and must be used with extreme caution. Early English statistics quoted by Doctor Zadek, in confirming other investigations, seem to prove that while the mortality of bakers below 40 years of age is normal, and perhaps somewhat below the average, the death rate is decidedly higher at ages over 50. This is confirmed by the investigations of Doctor Bertillon for the population of Paris during the period 1885 to 1889. Finally, Doctor Zadek observes that the evidence tending to prove health-injurious results of the employment is directly traceable to the excessive hours of labor, and particularly so in the case of bakers in large cities such as Paris, London, and Vienna. He anticipates satisfactory results from the progress of the industry within recent years, and the tendency toward the substitution of machinery for hand labor, but in particular from a maximum working day, prohibition of night labor, legal requirements of air, light, cleansing, and ventilation, and, finally, rigid factory inspection to conform the sanitary conditions of bakeries to those of modern sanitary requirements in general.

Another German authority on the hygiene of the bakery industry, Dr. C. Moeller, published a small treatise on the subject in 1898, including a careful consideration of all the important points considered at greater length by Doctor Zadek. According to the data presented by this writer of bakers dying between 45 and 65 years of age, 25 per cent died from chronic bronchitis or other respiratory diseases. He calls attention to the persistency of the flour dust and starchy particles in the bronchial tubes and even in the lungs, by quoting a medical authority to the effect that even two and a half weeks after leaving the employment starchy particles and other evidence of flour dust had been found in the expectoration of bakers examined. According to this same authority 47 per cent of the German bakers at that time worked over 12 hours a day and 16 per cent worked over 14 hours a day. Of the total number of bakers employed, 36 commenced their work between the hours of 12 and 2 a. m., while 25 per cent commenced work between 10 and 12 p. m. In other words, at that time most of the work was night work, with its resulting injurious consequences, including irregularity of life and exposure to other unfavorable conditions.([a])

In the United States the employment has not attracted the same amount of attention as in Europe, but the sanitary legislation governing the conduct of bake shops is evidence that the hygienic conditions have been far from satisfactory. It is quite probable that the conditions are somewhat better in this country than abroad, largely on account of the greater degree of concentration in the industry and the fact that a larger proportion of bread, crackers, pastry, etc., constitutes a factory product in this country than abroad. The general conclusions of foreign authorities are, however, strictly applicable to American conditions, and they may be summarized in the statement that the continuous and considerable inhalation of flour dust is injurious to health and a predisposing factor in the mortality from consumption and from respiratory diseases generally.

The number of male bakers 15 years of age and over in the United States, according to the report of the census on occupations for 1900, was 74,263, and of this number 1,813, or 2.4 per cent, were 65 years of age and over, which compares with 4.7 per cent for the entire male population of the continental United States. At ages 55 to 64 the proportion was 5.6 per cent, at ages 45 to 54 it was 11.3 per cent, leaving 80.7 per cent at ages 15 to 44, inclusive. The occupation is first referred to in the vital statistics of the census of 1890, when the number of bakers and confectioners in the registration area was 54,569, among whom there occurred 639 deaths from all causes, or 11.7 per 1,000. The death rate by divisional periods of life was comparatively high at all ages over 25, or, in detail, at ages 25 to 45 the rate was 11.19 for bakers, against 9.18 for males in manufacturing and mechanical industries; at ages 45 to 65 the rates were 28.45 and 20.13, respectively; and at ages 65 and over, 87.19 for bakers and confectioners and 77.67 for males in manufacturing and mechanical industries. In the registration area the mortality from consumption among bakers and confectioners during the census year 1890 was 2.91 per 1,000, and for diseases of the respiratory system, 2.0 per 1,000. But the rates were much higher in the cities where the mortality from consumption among bakers and confectioners was 3.89 per 1,000, while the mortality from diseases of the respiratory system was 2.80 per 1,000. In commenting upon the mortality, it is stated in the census report that—

> It will be seen from this table that the highest death rate [per 100,000] of bakers and confectioners in the registration States oc-

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[a] Gesundheitsbuch für das Bäckergewerbe, by Dr. Carl Moeller, Berlin, 1898.

curred from consumption (369.37), the rate from this cause being higher than the average rate among males in occupations in this class. The death rate from Bright's disease (92.34) was excessively high, being nearly twice the average rate among males in this class (49.06), and the rate from other diseases of the urinary system (60.38) was considerably higher than the average rate of males in this class from these diseases (45.21). The death rate from suicide (21.31) was higher than the average rate from this cause among males in this class, and the death rate from other accidents and injuries (39.07) was much less than the corresponding rate in this class (77.49). The death rate of bakers and confectioners from suicide in the registration cities in the nonregistration States (30.29) was higher than the rate from this cause in the cities in the registration States (20.28).([a])

In 1900 the number of bakers and confectioners reported in the registration States was 39,181, among whom there occurred 483 deaths from all causes, or 12.3 per 1,000. The death rates by divisional periods of life were slightly higher for bakers at all ages except 25 to 34. The differences were not very marked, or, to be specific, at ages 25 to 44 the rates were 7.9 for bakers, against 8.4 for males in the manufacturing and mechanical industries. At ages 45 to 64 the rates were 23.4 and 20.2, respectively, and at ages 65 and over 105.8 for bakers and confectioners and 105.4 for males in the manufacturing and mechanical industries. The mortality from consumption among bakers was 2.5 per 1,000, from pneumonia 1.2, and from other diseases of the respiratory system 0.4. In commenting upon the mortality, it is stated in the census report that—

> The highest death rates [per 100,000] of bakers and confectioners were due to consumption (250.1), diseases of the urinary organs (145.5), diseases of the nervous system (160.8), and pneumonia (117.4), but the rates due to all of these diseases except diseases of the urinary organs were lower than the average rates in this class. The rates from diseases of the liver (45.9) and other diseases of the digestive system (58.7) were much higher than the average rates from these diseases in this class.([b])

The Rhode Island vital statistics for bakers for the period 1852 to 1906 include 221 deaths from all causes, and of this number 44, or 19.9 per cent, were from consumption. During the decade ending with 1906 there occurred 86 deaths of bakers from all causes, of which 15, or 17.4 per cent, were from consumption. Of the mortality from other respiratory diseases 2.3 per cent were deaths from asthma and 9.3 per cent deaths from pneumonia, a total of 29 per cent of deaths from diseases of the lungs and air passages.

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[a] Report on Vital and Social Statistics, Part I, Eleventh Census of the United States, 1890, p. 119.

[b] Report on Vital Statistics, Part I, Twelfth Census of the United States, 1900, p. cclxxviii.

The most recent English mortality statistics of bakers are for the three years ending with 1902, referred to in the Supplement to the Sixty-fifth Annual Report of the Registrar-General, in part, as follows:

> At the earlier and later ages the mortality of bakers differs little from that of occupied and retired males, but that at other ages the death rates fall considerably below the average. In the main working period of life the comparative mortality figure was 922, or 8 per cent below the standard; the defect being mainly due to phthisis, to diseases of the circulatory and respiratory systems, and to accident, the mortality from the last-mentioned cause being less than half the average. Bakers experienced, however, a slightly higher mortality than the average from cancer.([a])

In the table which follows, a comparison is made of the mortality from all causes among English bakers and confectioners with occupied males generally and the comparison shows that the mortality from all causes was below the average at every divisional period of life, except 55 to 64. English statistics in this respect, therefore, do not entirely confirm the corresponding statistics of the United States census.

MORTALITY FROM ALL CAUSES AMONG BAKERS AND CONFECTIONERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for bakers and confectioners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.26	− 0.18	93
20 to 24 years	4.41	3.80	− .61	86
25 to 34 years	6.01	5.28	− .73	88
35 to 44 years	10.22	8.69	− 1.53	85
45 to 54 years	17.73	16.11	− 1.62	91
55 to 64 years	31.01	31.04	+ .03	100
65 years and over	88.39	75.64	−12.75	86

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of bakers and confectioners from consumption and from other respiratory diseases during 1890 to 1892 is compared with the normal mortality of occupied males from these diseases by divisional periods of life. The comparison shows that the mortality of bakers and confectioners from consumption was excessive in only three age groups, 25 to 34, 45 to 54, and 65 and over, and was considerably lower than the average in the other groups. The table further shows that the mortality from other respiratory diseases was excessive in only two groups, 15 to 19 and 55 to 64. The mortality was considerably below the average at ages 20 to 44.

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[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages, p. lxii.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **BAKERS AND CONFECTIONERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1890 TO 1892, BY AGE GROUPS.

[From Supplement to the Fifty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for bakers and confectioners.			Death rate per 1,000 for all occupied males.	Death rate for bakers and confectioners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.70	0.63	−0.07	90	0.26	0.28	+0.02	115
20 to 24 years.....	1.95	1.60	− .35	82	.61	.49	− .12	80
25 to 34 years.....	2.63	2.83	+ .20	108	1.13	.94	− .19	83
35 to 44 years.....	3.43	3.02	− .41	88	2.50	2.12	− .38	85
45 to 54 years.....	3.38	3.71	+ .33	110	5.15	5.05	− .10	98
55 to 64 years.....	2.65	2.44	− .21	92	10.32	10.49	+ .17	102
65 years and over.	1.50	1.86	+ .36	124	25.91	25.85	− .06	100

In the table which follows the mortality from consumption and from respiratory diseases other than consumption among bakers and confectioners for the years 1900 to 1902 is compared with the normal mortality of occupied males from these diseases by divisional periods of life:

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **BAKERS AND CONFECTIONERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for bakers and confectioners.			Death rate per 1,000 for all occupied males.	Death rate for bakers and confectioners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years.....	0.54	0.35	−0.19	65	0.24	0.29	+0.05	121
20 to 24 years.....	1.55	1.48	− .07	95	.48	.37	− .11	77
25 to 34 years.....	2.03	1.83	− .20	90	.77	.56	− .21	73
35 to 44 years.....	2.74	2.41	− .33	88	1.66	1.51	− .15	91
45 to 54 years.....	3.04	2.76	− .28	91	3.32	2.97	− .35	89
55 to 64 years.....	2.16	1.88	− .28	87	6.54	6.41	− .13	98
65 years and over.	1.11	1.02	− .09	92	17.77	15.60	−2.17	88

The comparison shows that the mortality from consumption was below the average at all ages and, with one unimportant exception, the mortality from other respiratory diseases among bakers and confectioners was lower than among occupied males generally. The table is self-explanatory and requires no extended analysis.

The corresponding statistics for Scotland exhibit a slightly different result. Limiting the comparison to ages 25 to 64, the general death rate of bakers and confectioners was in excess of the mortality of occupied males generally. The death rate among the former was 32.12 per 1,000, and among the latter 26.82. At ages 25 to 44 the mortality, however, was below the average, or only 7.99 for bakers and confectioners, against 9.32 for occupied males generally. The number of deaths from all causes among bakers and confectioners at ages 15 to 64 was 564, and of this number 104, or 18.4 per cent, were deaths from consumption. Of the mortality from other causes, 45 were deaths from bronchitis, 62 were deaths from pneumonia, and 8 were deaths from other respiratory diseases. Combining the mortality from consumption and other diseases of the respiratory organs, the proportionate mortality was 38.8 per cent.

In marked contrast to the generally favorable statistics of bakers and confectioners in England and Scotland are the returns for Switzerland for the period 1879 to 1890. The following table exhibits the mortality from consumption by divisional periods of life:

MORTALITY FROM CONSUMPTION AMONG BAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[Figures from Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for bakers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	1.30	1.30	....	....
20 to 29 years	3.04	2.75	−0.29	90
30 to 39 years	3.66	4.72	+1.06	129
40 to 49 years	3.65	3.96	+0.31	108
50 to 59 years	3.52	4.75	+1.23	135
60 to 69 years	3.25	5.92	+2.67	182
70 years and over	1.84	7.61	+5.77	414

According to this table, the mortality from consumption was excessive among bakers at all ages above 29 by from 8 per cent to 314 per cent. The most marked excess occurs at ages 70 and over, when, however, the small numbers partly invalidate the conclusions. The table, however, is suggestive as indicating possibly decided differences in the social condition of labor in England and in Switzerland.

The Swiss data are quite trustworthy, but their significance is, of course, practically limited to Switzerland.

The recorded industrial insurance mortality statistics of bakers include 1,357 deaths from all causes, of which 277, or 20.4 per cent, were from consumption. Of the mortality of bakers from respiratory diseases other than consumption, 124 were from pneumonia, 23 from bronchitis, 17 from asthma, and 21 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 34 per cent of the mortality of bakers was from diseases of the lungs and air passages. The number of deaths of bakers under consideration is exceptionally large and strictly representative of this important occupation. The excess in the consumption mortality of bakers is clearly brought out in the tabular presentation of the proportionate mortality from this disease by divisional periods of life, it being excessive at all ages below 65, but most so at ages 25 to 34, when out of every 100 deaths from all causes, 42.8 were from consumption, against a normal expected proportion of 31.3.

An analysis of the consumption mortality of bakers in detail is set forth in the table below:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG BAKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for bakers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of bakers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Bakers.	Males in registration area, 1900 to 1906.
15 to 24 years	112	43	38.4	27.8
25 to 34 years	201	86	42.8	31.3
35 to 44 years	259	75	29.0	23.6
45 to 54 years	248	43	17.3	15.0
55 to 64 years	250	23	9.2	8.1
65 years and over	287	7	2.4	2.7
Total	1,357	277	20.4	14.8

The preceding observations and mortality statistics, including the insurance experience, are much at variance with each other, and they do not entirely warrant definite conclusions. It is somewhat open to question how far the general official statistics are impaired in value by the inclusion of confectioners, who are probably less exposed to flour and other organic dust than bakers. The most convincing statistics are those for Switzerland and the industrial insurance experience data, both of which indicate an excess in the degree of consumption frequency, although not at identical periods of life. Taking all the facts, however, into careful consideration, they would seem to warrant the conclusion that consumption is of more frequent occurrence among bakers than among occupied males generally, and that the degree of excess in consumption frequency is partly the result of continuous and considerable inhalation of flour dust. The mortality rate is also affected by the general conditions under which the work of a baker is carried on, including excessive hours, unsanitary conditions of bake shops, night work, etc. The occupation is exceedingly important, both as regards the baker himself and the public at large, and a further and more thorough investigation into the mortality of this occupation would be a most valuable contribution to industrial hygiene.

The mortality of confectioners is not separately returned in the official vital statistics, except for the State of Rhode Island. During the period 1852 to 1906 there occurred 62 deaths, and of this number 15, or 24.2 per cent, were from consumption. During the ten-year period ending with 1906 there occurred 24 deaths of confectioners, and of this number 4, or 16.7 per cent, were from consumption. In addition there were 6 deaths from other respiratory diseases, or a total of 41.7 per cent of the mortality was from diseases of the lungs and air passages.

The only other available official vital statistics of confectioners, separately returned as such, are for Switzerland for the period 1879 to 1890. The statistics are set forth in tabular form, as follows:

MORTALITY FROM CONSUMPTION AMONG CONFECTIONERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[Figures from Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for confectioners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	1.30	2.34	+ 1.04	180
20 to 29 years	3.04	6.19	+ 3.15	204
30 to 39 years	3.66	6.36	+ 2.70	174
40 to 49 years	3.65	3.58	− .07	98
50 to 59 years	3.52	6.00	+ 2.48	170
60 to 69 years	3.25	9.38	+ 6.13	289
70 years and over	1.84	13.51	+11.67	734

According to this table, the mortality from consumption was higher at nearly every period of life than the corresponding mortality of occupied males generally and the corresponding mortality of bakers. How far the occupation is the exact equivalent of the

English and American term confectioner, it is not possible to state. It is significant, however, to note the high death rates from consumption at every period of life, which only at ages 40 to 49 corresponds practically to the normal for occupied males generally.

The industrial insurance mortality statistics of this occupation include 306 deaths from all causes, of which 68, or 22.2 per cent, were from consumption. Of the mortality of confectioners from respiratory diseases other than consumption, 40 were from pneumonia, 7 from asthma and bronchitis, and 7 from other respiratory diseases. When the deaths from consumption and from other respiratory diseases are combined, it is found that 39.9 per cent of the mortality of confectioners was from diseases of the lungs and air passages. The corresponding proportion for bakers, previously referred to, was 34 per cent. This difference in favor of bakers is confirmed by the corresponding statistics for Switzerland, but when comparison is made of the differences by divisional periods of life it is apparent that the data are not sufficiently large for an entirely safe conclusion, to the effect that the degree of consumption frequency among confectioners is really higher than the corresponding degree of consumption mortality among bakers.

The detailed analysis of the industrial insurance mortality statistics of confectioners, by divisional periods of life, is set forth in tabular form as follows:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG CONFECTIONERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for confectioners from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of confectioners, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Confectioners.	Males in registration area, 1900 to 1906.
15 to 24 years	51	13	25.5	27.8
25 to 34 years	52	22	42.3	31.3
35 to 44 years	62	19	30.6	23.6
45 to 54 years	39	5	12.8	15.9
55 to 64 years	56	6	10.7	8.1
65 years and over	46	3	6.5	2.7
Total	306	68	22.2	14.8

It is to be kept in mind, in considering this occupation, that the amount of physical labor required is much less and that, therefore, a less robust type is represented by confectioners than by bakers. Probably few other occupations emphasize so clearly the inherent difficulty of drawing really valid conclusions from occupation vital statistics of the comparative data of bakers and confectioners, representing otherwise quite similar employments. What is true of bakers is true of confectioners, that the hygienic conditions of this employment require to be made the subject of a qualified inquiry and that the available vital statistics should be brought together to establish clearly and precisely the degree of consumption frequency in this particular occupation by divisional periods of life.

STARCH MANUFACTURE.

The manufacture of starch, according to the census of 1900, gave employment to 2,655 wage-earners in 124 establishments, but it is quite probable that the actual number of persons employed in the manufacture of starch is larger, and perhaps much larger, when persons employed in the manufacture of starch in glucose factories are included. The commercial importance of this industry is considerable, but apparently there has been a material decline in both the amount and the value of the product during recent years. According to the census of manufactures, in 1905 the amount of starch made was 196,074,530 pounds, against 297,803,139 pounds in 1900. Of the total product 76.8 per cent was made from corn, 14.1 per cent from potatoes, and the remainder from other materials. The time of employment in cornstarch factories is generally throughout the year, while in the manufacture of starch from potatoes the period of employment is about three months only. There are a few wheat starch factories, which, however, probably employ less than a hundred persons. Most of the cornstarch factories are combined in the National Starch Manufacturing Company, with 22 plants, and its principal factory at Oswego, N. Y.

The process of starch manufacture varies, and is rather difficult of brief description. In the manufacture of cornstarch the corn is run through a fanning mill to blow away the dust, husks, etc., and is then steeped in water at from 70° to 140° F. from three to ten days, when the softened grains are crushed between rolls. This process, according to Thorp, is known as the "alkaline process." In the so-called "Burgen system" a continuous stream of water at 130° to 140° F. flows slowly through the steeping tanks, and after the corn has been thoroughly softened and a large quantity of extracted matter has been washed away, the corn is ground in buhrstone and roller mills, through which water flows continuously. Subsequent to this the starchy matter goes to a revolving sieve of brass wire for the coarsest straining and then to cylindrical wheels covered with bolting cloth. The subsequent process is described as follows:

> The starch collected in the several tanks is washed with water and sometimes again siphoned, and is then run through bolting cloth to the settling tanks, where it deposits in a dense compact layer fro

which the water can be drawn off very completely. The wet starch is then shoveled into frames lined with cloth and having perforated bottoms, through which the water drains. The cake of damp starch is cut into smaller blocks and placed on porous floors of plaster of Paris or brick, which absorb the adhering water. The starch is removed to the dry room and kept at a temperature of 125° F. for several days. While it is drying, the impurities still remaining in it find their way to the surface, where they form a yellowish deposit which is cut away when the starch is nearly dry. The block is then wrapped in paper and further dried at 150° to 170° F. for several days. During this time the mass contracts and cracks into a number of irregularly shaped prismatic rods, called "crystals," though they are not true crystals. The entire drying process requires several weeks, and the product as sent to market contains about 10 to 12 per cent of water.([a])

It is in the handling of the corn itself and in the final manipulation of the dry starch that there is considerable exposure to dust, the character of which quite closely resembles ordinary flour dust, and which, broadly speaking, makes the health-injurious circumstances of this employment conform to those of flour millers and bakers. While the conditions differ somewhat, according to the material from which the starch is made, whether corn, potatoes, wheat, rice, etc., the exposure to starch dust is practically the same. The employment has never attracted much attention as a health-injurious industry, and general vital statistics of the occupation, even if available, would be of small determining value, since it is practically among only the persons employed at the drying kiln and in the handling of the finished product, either by transporting it from the kiln to the packing room or in the final process of packing the starch into barrels and boxes, that there is any actual exposure to the inhalation of any quantities of starch dust. The various processes of starch manufacture have been briefly described in a bulletin of the Twelfth Census by Dr. H. W. Wiley, and by the same authority in Bulletin No. 58 of the Division of Chemistry of the United States Department of Agriculture, but the descriptive accounts do not throw much light upon the possible health-injurious circumstances of the industry in its various branches.

The occupation is very briefly described by Ramazzini, who states that "those who are employed about the making of starch are likewise liable to uncommon disorders." Of course in Ramazzini's time the manufacture of starch was entirely a domestic industry, with conditions totally different from those prevailing at the present time. He observes, however, that those who are compelled to handle starch in considerable quantities complain much about headache, of a difficulty of breathing, and of a cough "that's so troublesome as to force 'em to intermit for fear of choaking."

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[a] Outlines of Industrial Chemistry, by F. H. Thorp, Ph. D., pp. 355, 356.

Thackrah considered the employment at greater length, observing that—

> Starch makers inhale a fetid acetous vapor, which rises from the fermenting wheat, or rather from the water in which the wheat has been steeped. They are occasionally exposed, also, to great heat, the thermometer rising from 110 to 150, or sometimes even to 200 degrees. In that degree of heat, however, the men do not remain more than a few minutes at once; but they often work the whole day in a temperature above 100 degrees. More frequently, however, they are employed in rooms, wet, and open to currents of cold air. The manufacture is carried on by night, as well as day; but the men do not generally work more than twelve hours in the twenty-four. The muscular labor is varied and good.([a])

With special reference to the liability of starch makers to pulmonary and respiratory diseases, Thackrah remarks:

> Starch makers are subject to catarrh, pulmonic inflammation, and rheumatism. In the neighborhood of London they are pale and emaciated, complain of great debility, and are often affected with pains in the head and chest; but in the country these effects are by no means prominent.([b])

In Lincolnshire and Yorkshire, according to the same writer, the longevity of starch makers was apparently normal and men were met with who had attained to the age of 60 and upward. But in London and its neighborhood the health of starch makers was apparently decidedly unfavorable and the duration of life "remarkably abbreviated."([b])

In fact he was able to find few persons employed in this industry who had attained to an age over 40, and from such inquiries as he had made very few indeed, "after leaving the employment about that age, survived more than two or three years." Thackrah was unable to account for the difference in the health of starch makers in London compared with those in country towns, for the conditions of labor and exposure to dust, etc., were assumed to be practically the same.

Halfort, in his treatise on the diseases of artisans, published in 1845, referred briefly to the employment, and while he mentions that the pulverizing processes gave rise to a considerable quantity of dust he does not connect the same with any health-injurious consequences to the employees. Halfort considered the occupation chiefly with reference to the manufacture of wheat starch, and the only injurious factors, in his opinion, were vaporous exhalations, giving rise to diseases of the respiratory organs, but he points out that even at that time improvements were being introduced in the methods of manufacture, eliminating formerly objectionable conditions.

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[a] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, pp. 52, 53.

[b] Idem, p. 53.

Equally brief is the consideration of this employment by Hirt. He mentions the objectionable features of gases and vapors evolved in the preliminary processes of starch manufacture; but, apparently, no health-injurious consequences were traceable to such exposure. Hirt, who personally inquired into the subject, did not confirm the earlier conclusions of Halfort. The drying of the starch, in which there is practically the only serious possibility of dust exposure, was not considered detrimental to health by Hirt; but, apparently, he did not thoroughly inquire into this particular branch of the industry.

The most recent writer on the hygiene of starch making is Arlidge, who made inquiry at the principal starch works of England; but the information received was all of a negative character. In the opinion of the manufacturers, based partly upon the observations of medical officers attached to the works, there were no injurious results from any branch of the occupation. In fact, the conclusions were to the effect that "the starch makers are, it appears, even more healthy than the workers in other departments of the factory, judging from the fact that the claims of those workmen upon the 'sick fund' are proportionately smaller than those of others." Arlidge, however, suggests that it is to be borne in mind that exposure to dampness is a conspicuous incident and a possible cause of illness, more serious than exposure to flour dust in the business of starch making, for, he remarks, "Vast quantities of water are necessitated, with unavoidable exposure to wetting of clothes and feet; and, as a necessary accompaniment, a more or less humid state of the air." No evidence, however, was obtainable to prove that starch workers were more liable than others to rheumatic affections. Unfortunately, the final suggestion of Doctor Arlidge, that a more thorough inquiry be made to determine the possible health-injurious effects of the inhalation of flour dust and the general consequences of starch making on health, confirmed by precise and statistical investigations, was, apparently, not carried into effect.

The starch industry is one of the numerous illustrations of neglect on the part of those who have made inquiry into the diseases of occupation to ascertain the conditions of health in employments numerically unimportant. From such information, however, as is available at the present time it is safe to assume that the employment is not free from more or less health-injurious circumstances, which require sanitary supervision and the installation of effective ventilating devices at places where dust is generated in considerable quantities. That the quantity of dust may assume considerable proportions is made evident by the occurrence of disastrous dust explosions, and reference may be made to such an explosion at the dry starch plant of the Warner Sugar Refining Company, at Waukegan, Ill., which destroyed the plant and caused the loss of four lives. This explosion was caused by the ignition of the fine dust, or powder, arising during the grinding of the starch, and while the case may be an isolated occurrence, it is nevertheless a significant illustration of the fact that starch manufacture requires to be included in the classification of dusty trades.

THE TOBACCO INDUSTRY.

The tobacco industry divides itself into the handling of the raw product preliminary to the subsequent processes of manufacture and into the making of cigars, cigarettes, snuff, etc., as the finished product. The former is more properly, perhaps, a branch of agriculture, but in any extended consideration of the hygiene of the tobacco industry it seems best to include the processes of curing, sorting, and packing previous to the shipment of the raw product to the factory.([a]) The number of persons employed in the preliminary processes can not be stated, but the large majority are at work for only a portion of the year (being mostly farmers and laborers), in very much the same manner as is the case in cotton ginning and during the threshing season in the wheat industry. After the tobacco has been cut it is first required to undergo a process known as curing. At this stage of the process there is no considerable exposure on the part of the workmen to any conditions particularly injurious to health. The curing is done in so-called tobacco barns,([b]) which are fairly tight, but are well provided with ventilators to furnish ventilation until the tobacco is thoroughly cured. Artificial heat may or may not be used in this process, which rarely extends over more than two months in the year. When the tobacco is thoroughly cured and the stems are dried out it is again allowed to become slightly moist by absorbing moisture from the air and is taken down and placed in heaps, with sacks or cloths spread over them, to keep the tobacco in a moist condition; and to continue this condition sprinkling with water is occasionally necessary. There is, therefore, no dust generated at this stage of the process. The leaves are subsequently stripped from the stalks and are put by handfuls into boxes, and in this condition a considerable proportion of the tobacco is sold to dealers. In removing the stalk and center stem of each leaf, and while the leaves are sorted in a drying house, there is no doubt more or less exposure to dust and the pungent odors of the tobacco. When packed into hogsheads, as is always the case for export, there is further exposure, chiefly to the pungent odor of the tobacco, but apparently without serious consequence to health.([a])

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[a] It is stated in the special report of the census office on manufactures for 1905 (Vol. I) that "Establishments engaged exclusively in the assorting, stemming, and rehandling of tobacco were omitted from the factory census of 1905, although included in prior censuses. When the assorting and stemming was done in connection with the manufacture of cigars and cigarettes, or of chewing and smoking tobacco, the data for these processes were included." This explains why the returns for 1905 are not strictly comparable with those for 1900 and previous censuses.

[b] For an extended account of the widely varying methods of curing tobacco and a descriptive and illustrated account of the different types of tobacco barns, reference may be had to the special report of the Tenth Census on Culture and Curing of Tobacco in the United States. This report states that tobacco barns in North Carolina, for illustration, were built of logs, small and tight, of a usual size of 16 to 22 feet square (p. 116); while in Tennessee the usual size was from 20 to 24 feet square (p. 181); in contrast to these dimensions are the dimensions of the tobacco houses in Lancaster County, Pa., of from 20 feet square as a minimum to 40 feet wide and 150 feet long as a maximum, but a barn 36 feet wide by 72 or 80 feet long is considered to be the best proportioned (p. 156).

Within recent years tobacco-drying machines, so called, have been introduced extensively, and as a result the preliminary methods of manufacture have undergone material modification.([b]) These so-called "tobacco dryers" are of much the same nature as lumber dry kilns. The temperature of tobacco dryers is stated to be from 180° to 240°, and sometimes very much higher, while in lumber kilns the temperature rarely exceeds 180°. The heat is forced into the dryers by a blower system, often so constructed as to result in dust accumulation, with a consequent risk of dust explosion because of the not inconsiderable quantities of "greasy inflammable dust of tobacco," according to investigations made by fire insurance companies. It has been suggested that the machine used for blowing purposes should have the fan in its journal surrounded by wire gauze of fine mesh so as to intercept the very fine dust, which by inference warrants the conclusion that such dust is present in sufficient quantities to prove a menace to the health of the workmen occasionally employed in drying houses of this construction.

The conditions of labor, as well as the methods of handling the tobacco at this stage, vary widely in the different tobacco districts of the country, and so much so that a descriptive account of the methods in vogue in one section would not be applicable to those in vogue in another section. The manufacturing processes have undergone material changes during the intervening years since the report of the Tenth Census on the tobacco industry was published, but that report still constitutes the most valuable source of information regarding the methods and conditions incidental to the handling of the tobacco preliminary to the manufacturing processes proper. Mention is made in this report, for illustration, of the making of strips in the Evansville and other tobacco districts of Indiana, in which children from 9 to 12 years of age were largely employed, making from 50 to 100 pounds per day, while full-grown experts could make from 150 to 200 pounds. In Virginia, according to the report referred to, the making of strips was a large industry at Lynchburg, the process being described as follows:

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[a] For recent accounts of methods of curing tobacco see Farmers' Bulletin No. 60 (1902) and Bureau of Plant Industry Bulletin No. 143 (1909), published by the United States Department of Agriculture.

[b] The descriptive account of tobacco dryers is from a report by Mr. Holmes Cummins, special agent of the Firemen's Fund, of Richmond, Va.

> Loose tobacco is taken to the factory and placed upon the floor of a room adjoining that in which the work of stemming is done, each lot or pile being kept separate as purchased, or, if want of space makes it necessary, several lots of the same grade, style, and quality are bulked together. The number of pounds of leaf needed to make a hogshead or a tierce of strips of a given grade is carried from the storage-room into the stemming apartment, sprinkled with water to soften, and heated in a steam-box, a few basketfuls at a time. The bundles are then ready for the stemmers, the leaves being supple, pliant, and in such condition that the stems may be quickly removed without tearing the strips.([a])

It is stated further that stemming at that time was mostly done by negro women, who were very dexterous at the work, and that they were assisted by children, who untied the bundles and placed them ready for the stemmer and straightened and tied up the stems. Children were also employed in putting the bundles of strips upon sticks and in carrying the same to the drying room. The final process of handling the tobacco at this stage of the industry is described as follows:

> When the tobacco is thoroughly dry, the windows of the drying room are opened to let it cool off—usually all night. They are then closed again, and soft steam is turned into the room through perforated pipes, so managed as to render the tobacco fit for handling. It is then carefully laid upon the floor in "coops"—one stick with tobacco overlapping another—and built up straight to a height of 5 feet or more, each coop containing one tierce, or two to make one hogshead. Here it remains two days, to cool off and toughen, when it is ready for packing. In the work of packing steam is again used to soften the tobacco, six or eight sticks of bundles at a time being carefully placed within the steam box, the door of which is slightly closed, and soft steam being turned on for one or two minutes. The sticks are then carried to the packing table, opened, the bundles shaken out and straightened, and neatly packed with the least possible delay.([a])

While during the intervening years there have been some changes, the earlier descriptive account applies with a fair degree of accuracy to the processes of stripping and stemming at the present time. No writer on occupation diseases has given extended consideration to the hygienic aspects of employment in these preliminary operations, although Arlidge observes that the dust generated during the preliminary processes of sorting the leaves is of "no important physiological energy." Nor does he comment unfavorably upon the subsequent processes of stripping the leaves of the midribs, which is usually the work of women and girls.([a])

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[a] Special report of the Tenth Census on Tobacco Production in the United States, p. 211.

In the unpacking of the tobacco from the hogsheads or casks the leaves require to be shaken to remove the sand, dust, and other minute particles adhering to them. The quantity of dust generated in this process differs very materially according to the grade of tobacco handled and its condition at the time of unpacking, but no accurate observations have been made a matter of record as to the actual amount of dust produced and the possible relation of such dust to the health of the workers.

The general hygiene of workers in tobacco has been considered at some length by Dr. Ludwig Jankau, who brings together the results of several investigations made by various governments into the social conditions of persons employed in the manufacture of tobacco, amplified by quotations from medical authorities, which, however, are more or less conflicting. It is made clear that the social condition of labor has an important bearing upon the health of the employees, which may or may not have been exaggerated by the continuous and considerable exposure to tobacco dust, odors, etc. The author quotes the conclusion of Rochs that by proper ventilation of the workroom the employment in tobacco factories is not subject to health-injurious results.([b]) This conclusion is accepted by Jankau, who observes that if the government regulations as to ventilation are properly complied with the health-injurious results are reduced to a minimum. Since the investigations of Jankau were chiefly for the purpose of determining the possible health-injurious effects of the use of tobacco on the human organism, his limited consideration of the hygiene of the industry itself did not warrant final conclusions. Thus far no qualified inquiry has been made to determine with accuracy how far the preliminary processes in tobacco manufacture are injurious to the health of the workmen employed, but in view of the fact that the period of employment is, as a rule, only for a portion of the year, the health-injurious effects in any event are probably very slight except, perhaps, in the case of children and persons of frail physique, already perhaps, predisposed to diseases of the lungs.

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[a] The conditions affecting health in the process of stripping are discussed by Dr. Roger S. Tracy, in his special report on the tobacco industry, published in the Third Annual Report of the Board of Health of the City of New York, 1873, p. 310; from this report is quoted the following:

> Strippers sit upon wooden benches, in a constrained position, all day long. They are not as healthy in appearance as the men, most of them having pallid, flabby countenances, and visiting the dispensaries often to be treated for loss of appetite, chronic bronchitis, and palpitation of the heart. It must be remembered, however, that they have smaller wages than the operatives of the first class, and presumably live much more poorly, besides drinking large quantities of tea, all of which elements in the problem must be fairly considered, before a safe conclusion can be reached regarding them.

Tracy also refers to persons employed in tobacco packing, stating that—

> Operatives occupied in packing are generally pretty healthy. They are, however, very subject to nasal catarrh, and catarrh of the larger bronchial tubes, both of which affections are very persistent unless the occupation of the patient is changed. On a seaboard, where catarrh is an almost universal complaint, it would perhaps be unfair to attribute the catarrh of tobacco workers entirely to their occupation.

[b] Monograph on Tobacco and Its Effects upon the Human Organism, with Special Reference to its Chemical, Physiological, Pathological, and Therapeutical Aspects, by Dr. Ludwig Jankau, published in the German language, Munich, 1894, p. 16.

THE MANUFACTURE OF CIGARS AND CIGARETTES.

The tobacco industry in 1905, according to the census of manufactures, gave employment to 159,408 wage-earners, of whom 130,949 were employed in the manufacture of cigars, 4,469 in the manufacture of cigarettes, 23,044 in the manufacture of chewing and smoking tobacco, and 946 in the manufacture of snuff. Of the total number employed, 85.0 per cent were, therefore, engaged in the manufacture of cigars and cigarettes. The distribution of labor according to age and sex varied considerably in the different branches. In the manufacture of cigars and cigarettes, out of a total of 135,418 wage-earners, 57,174, or 42.2 per cent, were women, and 5,274, or 3.9 per cent, were children under 16 years of age. The returns of the census report on occupations for 1900 include all persons of ages 10 years and over employed in the manufacture of tobacco, reported as 131,464, of whom 87,966 were males and 43,498 were females. In considering the health and mortality of tobacco workers it is necessary to keep in mind that an exceptionally large proportion of the workers in this industry are foreign born or of foreign parentage, including a considerable number of Bohemians and Cubans, both nativities being subject to a higher death rate from consumption than the population of native parentage. Of the 131,464 persons employed in the tobacco industry, 40,974, or 31.2 per cent, were native whites of native parents; 34,655, or 26.4 per cent, were native whites of foreign parents; 39,581, or 30.1 per cent, were foreign born; and 16,254, or 12.4 per cent, were colored. In more detail, the numbers employed in the tobacco and cigar industry of foreign parentage were as follows: The number of German parentage was 30,860; of Bohemian parentage, 6,053; of Russian parentage, 6,105; and of Irish parentage, 7,631. The census returns do not state the number of Cubans employed in the industry, but in cities like Key West and Tampa the large majority of persons employed are of Cuban birth or parentage.

The importance of nativity as a factor in occupation mortality statistics will be better understood when it is stated that, according to the vital statistics of the Twelfth Census, the death rates in the registration area at ages 25 to 34, at which period the mortality from consumption is proportionately of most importance, were 6.4 per 1,000 for persons having native-born mothers, 7.4 per 1,000 for persons having German mothers, 8.1 per 1,000 for persons having Bohemian mothers, and 12.2 per 1,000 for persons having Irish mothers. No official death rates, by divisional periods of life, for the Cuban element of the population have been published. Since the manufacture of cigars in certain cities is very largely carried on by Bohemians, the comparative death rates for selected periods of life are included for the purpose of convenient reference. At ages 15 to 24 the death rate for those having native-born mothers was 5.0 per 1,000 and for those of Bohemian mothers 4.7; at ages 25 to 34 the rates were 6.4 per 1,000 for those of native-born mothers against 8.1 for those of Bohemian mothers; at ages 35 to 44 the respective rates were 7.5 per 1,000 against 10.5; at ages 45 to 64 they were 14.6 against 18.8; and finally, at ages 65 and over the rates were 65.9 per 1,000 for persons having native mothers against 72.7 for those having Bohemian mothers.(a)

It is evident that important differences like these require to be taken into account, but it has not been clearly established whether the Bohemians, as such, are subject to a higher death rate, or whether the excess in the Bohemian mortality in the United States is the result of an unfavorable environment and employment in health-injurious occupations.

In the manufacture of cigars, according to the factory census of 1905, 130,949 wage-earners were employed, and of this number 54,426, or 41.6 per cent, were women. In the manufacture of cigarettes 4,469 wage-earners were employed, and of this number 2,748, or 61.5 per cent, were women.

From a descriptive account of the tobacco industry as carried on at the present time, included in the census of 1900, is quoted the following:

> Within the last few years both the cigar and the cigarette manufacture have been revolutionized by machinery. As cigar making is widely diffused in the form of numerous small establishments in which the work is done by hand, the utilization of modern machinery in the manufacture of cigars is not as general as in that of cigarettes, which is concentrated in large factories. Four cities, namely, New York, N. Y.; Richmond, Va.; Durham, N. C.; and Rochester, N. Y.,

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[a] Report on Vital Statistics, Part I, Twelfth Census of the United States, 1900, p. lxxxiv.

produce about 94 per cent of all the cigarettes manufactured in the United States, and practically all are machine made. Considering the large number of very small cigar factories in the United States, comparatively few establishments of this class are sufficiently large to make a complete equipment of modern machinery a paying investment. Taking the largest factories, however, as representative of the application of modern machinery to the industry, it is a fact that both cigar and cigarette manufacturers are utilizing some of the greatest contributions of genius to the lessening of the world's work. Everything, from the stemming of the leaf to the payment of wages to the employees of the factory, is done by machinery. In a modern cigarette factory the prepared tobacco and the sheets of paper used for wrappings are fed to machines which cut the paper into proper size for the wrapper, gum its edge, measure the exact quantity of tobacco needed for each cigarette, wrap it, make the edges of the wrapper adhere, cut the ends, and pack the cigarettes in boxes. In the manufacture of cigars, the prepared filler is placed in the hopper of a machine which apportions the quantity necessary for each cigar, places it in the binder spread to receive it by the operator of the machine, and rolls it. The wrapper is subsequently added by hand or by machinery.

The crude hand manufacture of chewing and smoking tobacco and snuff from the natural and unflavored leaf has grown to the modern manufacture of a multitude of forms, which are the products of elaborate systems of selections, blending, fermentation, flavoring, and saucing, designed to satisfy the tastes of the various classes of consumers. As to form, there are two general classes of smoking tobacco put upon the market, namely, the granulated or flake, and the cut or shredded forms. The former is produced by granulating machines of different styles and varying capacity, in which the breaking and sifting principles predominate. The latter class is produced by feeding the prepared tobacco, flavored and gummed, into machines which first compress it and, in turn, feed it to rotating or vertically reciprocating knives, which shred it to any desired fineness; it is then dried and "bulked," after which it is packed in paper, foil, cloth, tin, or glass packages in a multitude of sizes and styles.([a])

It is evident from the foregoing descriptive account that the processes of manufacture involve more or less the production of considerable quantities of tobacco dust. In the making of fine-cut chewing tobacco practically the same machinery is employed as in the manufacture of smoking tobacco, but the leaf is cut into much finer shreds, which in all probability is the cause of a larger amount of dust production.

The division of labor in cigar making is briefly described in a special report of the Commissioner of Labor, on the restriction of output, with special reference to the tobacco industry, in part as follows:

In cigar-making establishments where there is a division of labor, the employees are usually divided into the following classes: Casers, who dampen the tobacco; strippers, who remove the large midrib of each leaf (removing all the rib from Sumatra wrappers and from seed, that is, domestic tobacco, and two-thirds of the rib from Habana tobacco); bookers, who straighten out the leaves, making them up in pads for bunches and wrappers; bunch makers (also called filler breakers), who shape the filler tobacco, covering it with a portion of a leaf large enough to make a binder, which holds it in shape; rollers, who cut the wrappers and roll them around the bunches, and cut off the tuck or open ends, completing the cigars; packers, who assort the cigars according to color, pack them in boxes, and paste the internal-revenue stamp thereon.([a])

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, pp. 671, 672.

In the same report it is stated that in a large factory having a total of 1,639 employees the number employed in the different occupations were classified approximately as follows: "Casers, 40; strippers, 160; bookers, 60; cigar makers, who do both bunch making and rolling by hand, 360; bunch makers, 290 (55 making bunches by hand, 235 by machines); rollers (by machine), 465; packers, 110; foremen, 16; floor boys and miscellaneous help, 138."([a])

Among other factors which require to be taken into account is that cigars made in open or nonunion shops are usually made with machinery, while those made in union shops are almost invariably made by hand. The hours of labor vary, averaging not quite 53 in nonunion factories to a trifle over 45 hours a week in union factories. In making cigars entirely by hand the tools employed are a table, a knife for cutting wrappers to shape, and a cutter which clips off the tuck ends of the cigars. The last-named instrument is of considerable hygienic importance in that it does away with the insanitary habit of biting off the ends, which are often swallowed by the operatives, with unmistakable injurious consequences to health. Machines are used to an increasing extent, and particularly so in the manufacture of cigarettes, in which they almost entirely do away with the necessity for hand labor. In factories where machinery is most used, "there are machines for stripping and booking the tobacco, machines for chopping up tobacco for short-filler bunches, machines for making short-filler bunches, machines for making long-filler bunches, and machines for rolling cigars."([b])

From the same report is quoted the following descriptive account of other important machinery used in the manufacture of cigars at the present time:

The cigar-rolling machine, or suction table as it is called, is also a hand machine, except that power is needed to operate the exhaust fan which supplies necessary suction. On this table the operator, by means of a die, cuts out the wrappers and then rolls them around the bunches, while the leaf is held down flat by suction.

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[a] Eleventh Special Report of the Commissioner of Labor, Regulation and Restriction of Output, p. 559.

[b] Idem, p. 572.

Another machine is called the dieless suction table, the perforations for suction being in a flat plate instead of in a die. One advantage of the suction table, from the manufacturer's standpoint, is that it aids in stretching the wrappers more than can be done by the fingers alone, hence an additional wrapper can frequently be obtained from the leaf.

The long-filler bunching machine and the suction table are in use in large factories throughout the United States and Europe.([a])

How far the use of machinery bears upon the question of health has not been determined, but it is safe to assume from such accounts as have been published that the conditions affecting health have been somewhat improved. The use of machinery in cigar making is on the increase, and it is estimated in the report previously referred to that 85 per cent or more of the cigars manufactured in the United States are retailed at 5 cents or less, and that within the next ten or fifteen years all of this class of cigars will be made by machinery. It is pointed out in the same report (p. 575) that "the use of machinery tends toward an increase in the size of the establishment, and it is significant that in each of the three cities [investigated] the open and nonunion factories using machinery are very much larger than the union factories." The principal objection of labor unions against the use of machinery is stated to arise from the fact that a much cheaper grade of labor may be employed, and that while formerly only men were engaged in cigar making, since the introduction of machinery the proportion of female employees has become very large; in fact, it is stated that in many factories only women and girls are employed on the bunch-making machines and suction tables, and that the number of females is as high as 80 per cent of the total number of employees, including the miscellaneous help. In the 7 open and 2 nonunion factories investigated, with a total of 4,169 employees, the number of females was 3,049, or 73.1 per cent, against 36.1 per cent of females employed in 8 union factories. While apparently these considerations have not a direct relation to the hygiene of the industry they are nevertheless important and more or less determining factors which require to be taken into account.([b])

The hygienic aspects of the tobacco industry, chiefly with reference to the manufacture of cigars and cigarettes, have been considered by practically all the authorities on the diseases of trades, beginning with Ramazzini in 1670. Even at that early date the use of tobacco had become quite general and the health-injurious effects in individual cases of excess in the use of tobacco had become apparent. At that time the use of snuff was much more common, however, than the use of tobacco in the form of cigars and for smoking and chewing purposes, and Ramazzini observes that the use of snuff had in his time become so common in Italy that men, women, and children made use of it, and that it was included in the daily provisions of a family. He remarks that "the tobacconists themselves who prepare it are sufficient evidence of its unjuriousness to the head and stomach," and that the workmen employed in its manufacture suffered from headache, megrims, and other afflictions, until inured to the employment by continuous exposure.(a) The observations of Ramazzini are, however, chiefly with reference to the health-injurious consequences of excess in the use of tobacco, and not so much with the health of the workmen employed in its manufacture. Among other remarks by Ramazzini which may be included here, is a reference to the use of chewing tobacco, regarding which he remarks that "I have known a great many brought to consumption by chewing tobacco who flattered themselves that their health was preserved by the continuous flux that issued from their mouth and could hardly be persuaded that they did themselves an injury in thus robbing the saliva glands, etc., indeed, the whole body, of their nutritious juice."(b) More scientific investigations of recent times fully sustain the early opinion that there is quite probably a very intimate relation between the use, and certainly the excessive use, of tobacco and disturbances of and interference with the nutritive functions.

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[a] Eleventh Special Report of the Commissioner of Labor, Regulation and Restriction of Output, pp. 572, 573.

[b] For a descriptive account of cigar making by machinery, with many illustrations, see the Scientific American for July 7, 1906.

After Ramazzini the subject was considered by Thackrah, who remarks that—

> Tobacco manufacturers are exposed to a strong narcotic odor, and in the stoving department to an increase of temperature. Yet the men appear healthy. Here, as well as in several other employments, we admire the agency of that conservative principle, to which I lately referred. Men breathe an atmosphere strongly impregnated with a poisonous substance, yet become insensible to its influence. The only ill effect we can find is from the heat of the stoving department, which all men can not bear.(c)

Also, Thackrah quotes from the Lancet an interesting account of the observations by M. Pointe, of Lyon, France, relative to tobacco manufacture in that city, in part as follows:

> The number of workmen who were the subject of M. Pointe's observations amounted to 500; they were employed at one manufac-

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[a] Treatise of the Diseases of Tradesmen, Ramazzini, English edition of 1705, p. 90.

[b] Idem, p. 93.

[c] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 56.

tory, and, although occupied in different ways, were all of them in continual contact with tobacco. The affections to which they seemed subject were principally pulmonary consumption, inflammation of the eyes, anthrax and furuncles, the two latter of which generally appeared on the trunk, were extremely tedious, and unless the occupation of the patient was changed, hardly ever admitted of permanent cure; but the affection which seemed to prevail most was purpura hæmorrhagica, and a disposition to scurvy. On the other hand, it is worthy of remark that tobacco manufactories, in some degree, appear to be exempt from certain affections, viz, intermittents and scrofula, which are very common among the inhabitants of Lyon, the latter being remarkably prevalent in other manufactories, especially those of silk. Itch, against which tobacco has often been asserted to possess prophylactic powers, was very frequent; but trembling and nervous affections, to which persons who are much in contact with narcotics are said to be very liable, was in no instance observed as the effect of continued employment in the manufactory in question.(a)

Halfort, in 1845, refers to the investigations by Simeon, pertaining chiefly to the French snuff factories and including about 5,000 workmen, confirming the favorable conclusions of Thackrah, that the dust produced in tobacco manufacture did not, apparently, have a decidedly injurious effect upon health. Halfort adds the statement that it has been observed that tobacco workers were less liable to infectious diseases than workmen in general, but he did not support his conclusions, nor those of earlier writers, by conclusive statistical data of sickness and mortality.

More scientific and conclusive are the observations of Dr. Waller Lewis in 1855 on "The diseases of workmen employed in the manufacture of tobacco." After stating that there were then ten large government factories for the manufacture of tobacco in all its branches, and after pointing out that the health conditions would necessarily vary in the different establishments, Lewis remarks:

Medical men are attached to these factories; their institution goes back to the earliest times of the monopoly, that is to say, 1811. For a long time their duties consisted merely in visiting the workmen, either at their entrance into the works, in order to certify as to their health, and to put aside those in ill health and those laboring under contagious diseases, or during their sojourn in the factories, to give them advice and attention. At the present time the mission of these physicians is more extended. The administration has increased it by requiring them to transmit, in detailed reports, annually, the remarks which they may have made upon the health of the workmen, upon the maladies observed in the manufactories, and on the peculiarities which these maladies may have presented; a most excellent measure, which bears witness to the zeal of the administration for the interests confided to it, and which should be adopted in all establishments which occupy a number of workmen.[a]

(a) Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 56.

The consensus of medical opinion at that time is summed up in the statement by Lewis, that "tobacco appears but rarely to produce sensible effects on the workmen, even at the commencement of their work." In the manufacture of snuff, however, more injurious effects had been observed, and in some cases permanent injury had been produced in the case of persons of a very nervous temperament. Some of the medical attendants assert that the manufacture of tobacco is not only not injurious to the men, but that it even prevented phthisis and other diseases of the chest. Lewis quotes a Doctor Melier, who had lately investigated the subject, to the effect that new workmen had always some difficulty in accustoming themselves to the atmosphere of the workshop, "charged as it is with particles of the tobacco." After, however, the first difficulties are surmounted, the workmen become habituated to the work and indifferent to their surroundings. In conclusion, however, Lewis makes the significant admission that—

> Certain workmen, however, experience a considerable change, which deserves attentive study. It consists in a particular alteration of the complexion. It is not a simple discoloration, an ordinary paleness, it is a gray aspect, with a wan dull appearance, a mixed shade between chlorosis and certain cachetic diseases. The physiognomy receives from it a peculiar character, which an eye accustomed to see these cases can recognize immediately as occurring only to tobacco workmen. This facies is only observed among those that have been long at work at tobacco. Doctor Hurteaux states that it requires at least two years to acquire this countenance.[b]

In suggesting remedies to overcome the injurious effects likely to result in the different branches of tobacco manufacture, Lewis suggests a mode of fabrication "which causes the least disengagement of dust," which in itself is a candid admission of a considerable quantity of dust produced, in any event, in the manufacture of snuff. He further suggests improved methods of ventilation, and finally, that individuals of weak or nervous constitution should not be employed in tobacco factories. The reduction of dust, in his opinion, would be secured by handling tobacco in a moist state, for it had been observed that the health of the workmen was much more affected when the tobacco was handled in a dry state.

While the observations by Lewis and others of that period are favorable to the industry, they are not conclusive, in the absence of the necessary comparative statistical data, exhibiting precisely the incidence of diseases more or less resulting from continuous exposure to the emanations or odors of tobacco on the one hand, and of considerable quantities of dust on the other. The favorable conclusions of Lewis are partly contradicted by his own suggestion for improved methods of ventilation and dust removal, for, if he had not thought the dust injurious or detrimental to health, it would certainly not have attracted his attention.

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[a] Report on the Laws and Ordonnances in Force in France for the Regulation of Noxious Trades and Occupations, London, 1855, pp. 67, 68.

[b] Idem, p. 69.

Hirt, in 1871, contributed the first extended consideration to the subject of tobacco workers and their diseases, preceding his remarks by a bibliography, limited entirely to French and German sources. He observes at the outset that probably no other question has aroused more controversy in the discussion of occupation diseases than the effects of tobacco, and in particular tobacco dust, upon human health. Regardless of the many investigations which had been made up to that time, Hirt observed that no definite conclusions had been reached. He called attention to the remarkable contrast in the conclusions arrived at by different authorities, some declaring that the industry was free from objectionable features, others maintaining, on the contrary, that the employment was decidedly injurious to health. Hirt calls attention to the paucity of statistical data regarding the health of persons employed in the tobacco industry, and not even the government tobacco factory of Paris, with more than 5,000 employees, was in a position to furnish a statistical statement of the health and mortality of the employees. In considering the various branches of the industry, Hirt described in some detail the preliminary processes, chiefly in connection with the manufacture of smoking tobacco, but he, apparently, considered these branches free from conditions injurious to health. He remarks that tobacco dust is produced in the sorting and cutting of tobacco, in the manufacture of cigars, but only in very considerable quantities in the manufacture of snuff. But, apparently, much more important as a factor detrimental to health, is the odor of the tobacco itself, or the evaporations, on account of the presence of perceptible proportions of nicotine. In the opinion of Hirt, it can not be questioned that these effects are equally, if not more, serious in their consequences than exposure to tobacco dust, for he points out that the consequences of exposure to tobacco odors are disturbances of the nervous system and the serious impairment of the digestive functions, including effects on the metabolism generally, made evident in alterations of the red corpuscles of the blood. These effects, of course, do not require extended consideration in a discussion on the effects of dust on the health of workmen and the relation of such dust to the degree of consumption frequency, but they require to be considered as contributory causes, tending materially to increase the liability to tubercular diseases. Among these contributory causes Hirt mentions also the comparatively high degree of temperature, tending to increase the health-injurious effects of nicotine in the atmosphere, the importance of which perhaps is made more clear when it is stated that in American leaf tobaccos which have been analyzed the proportion of nicotine varies, according to Dr. Gideon E. Moore, of New York, from 0.63 per cent to 5.60 per cent.

While Hirt concedes the dusty nature of the employment, he leaves the question open as to whether the effects of such dust are really injurious to the workmen. His own conclusions are rather favorable, but they are not fully sustained by the necessary statistical evidence. He concedes that there is a division of medical opinion and that many physicians who have practised for years among the employees of tobacco factories consider the dust as decidedly injurious and dangerous to health. Hirt himself emphasizes the great importance of adequate ventilation to reduce the dust nuisance to a minimum, while at the same time he calls attention to the importance of regular habits of life and sobriety as the best safeguard against ill health and premature mortality. He remarks that at that time at least, referring to conditions in Germany, the social condition of labor among tobacco workers was of a decidedly low order, which in itself would account for a considerable proportion of the mortality from phthisis without necessarily any reference to the exposure to tobacco dust. As to the occurrence of tabacosis pulmonum, Hirt is of the opinion that a distinct occupation disease resulting from the inhalation of tobacco dust has not been clearly established, and that before a conclusive opinion could be rendered upon this subject much more satisfactory pathological evidence would be required.

That the liability of tobacco workers to the inhalation of health-injurious dust is not exaggerated even by Hirt is made evident by a brief reference to the subject in Doctor Mapother's lectures on artisans' diseases before the Royal Dublin Society in 1874, where the opinion is expressed that—

> As regards the tobacco trade, cleanliness, ventilation, and the use of a respirator, would greatly lessen the weakness, functional heart diseases, and extraordinary complexions, which greatly trouble the workers. Their time of work should be short, with frequent intermissions. Rolland's torrefier is used in France, to the great advantage of the work people.

Dr. B. W. Richardson, in 1876, considered the health-injurious effects of tobacco dust, observing that—

> The dusts arising from tobacco-leaf during the process of making cigars is most injurious. While the leaf is being rolled up, unless the ventilation of the room is exceedingly perfect, the dust from broken leaves and siftings is inhaled, and proves most irritating. In

the course of drying, the dust and vapor from the drying room act in combination, and lead not only to oppression of breathing, but to dryness of the throat, and, in the young, to giddiness and nausea. One workman told me that he never got over the bronchial irritation produced by this dust until he left his work at night; then the effect subsided.([a])

Writing with special reference to American conditions, Tracy, in a discussion of the diseases of occupation, states that—

> Persons who are engaged in the manufacture of tobacco inhale dust which contains nicotine and some ammonia. It is not necessary here to describe the various processes of curing, sorting, stripping, cutting, and drying the leaf, or to go into the particulars of the manufacture of cigars and snuff. There is in all the rooms of a tobacco factory a strong odor of tobacco, caused chiefly by dust, and in the rooms where snuff is packed the atmosphere is fairly thick with it. The workmen are, therefore, all subjected in different degrees to the action of the tobacco dust as an external irritant, and also to the absorption of nicotine by the system.([b])

Referring to the conflict of opinion among authorities on diseases of occupation regarding the more or less health-injurious consequences on persons employed in the manufacture of tobacco, Tracy remarks that—

> While Ramazzini, in accordance with his usual pessimistic tendencies, declares that all the workmen are in general thin, pallid, yellow, and asthmatic, and suffer violent pains in the head, vertigo, nausea, and continual sneezing, and Heurtaux, Kostial, and others have agreed with him more or less, Parent-Duchâtelet, d'Arcet, Ygonin, Berutti, and Chevallier claim that workmen in tobacco factories are as healthy and long-lived as any other artisans, or even more so. The truth, as is apt to be the case in disputed questions, probably lies between these two extremes.([b])

Tracy also considered at some length the effects of work in tobacco factories on the health of young women, sustaining by statistical data of the average fecundity among women cigar makers and among the general population his conclusions adverse to the employment of females in such establishments. Curiously enough, Tracy concludes that no special preventive measures are necessary in tobacco factories, except to forbid the employment of children under puberty, and possibly all females, disregarding entirely the abundant evidence of dust-generating processes more or less injurious to health.([c])

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[a] Lecture on "Unhealthy trades," by Dr. B. W. Richardson, Scientific American Supplement, March 4, 1876, p. 154.

[b] Hygiene and Public Health, edited by A. H. Buck, M. D., Vol. II, 1879, p. 41.

[c] The conclusions of Tracy were based upon special investigations made as assistant health inspector to the city sanitary inspector of the health department of the city of New York, published in the form of an appendix to the Third Annual Report, 1873, pp. 308 et seq.

The New Jersey bureau of labor statistics, in 1892, made an investigation into the trade life of cigar makers, including 1,061 persons, of whom 33.2 per cent had entered the trade life at ages under 16 years. By ages attained, 3.4 per cent were between 51 and 60 years, and only 1.1 per cent were 61 years of age and over. According to the country of birth, 34.2 per cent were foreign born. Of the total number under observation, 9.8 per cent were beginning to decline, the proportions varying, of course, with increasing age, ranging from 1 per cent at ages under 26 to 21.2 per cent at ages 41 to 50, and 58.3 per cent at ages 61 and over. The average number of years at work was returned as 14.4, varying also, of course, with increasing age, or from 5.2 years at age 21 to 20.1 years at ages 36 to 40, and 48.3 years at ages 61 and over. Arranged according to the number of years at work, 10.3 per cent had been employed under 5 years, 25.6 per cent from 5 to 9 years, 23.2 per cent from 10 to 14 years, 16.7 per cent from 15 to 19 years, 15.8 per cent from 20 to 29 years, 6.3 per cent from 30 to 39 years, and 2.1 per cent had been at work for 40 years and over. Of the number returning their health as in a period of decline, 35.6 per cent gave the cause as diseases of the throat and lungs, 33.6 per cent as general debility, 8.6 per cent as failing eyesight, 5.8 per cent as rheumatism, 5.8 per cent as catarrh, and 4.8 per cent as nervousness. While the results of the investigation do not warrant final conclusions as to the relation of the industry to health, the data are sufficiently convincing to prove that the normal duration of trade life is curtailed in the case of cigar makers as the result of the employment.

Arlidge, in his account of the hygiene of tobacco manufacture, first calls attention to the conflicting opinions respecting the health phenomena attending the occupation, observing, however, that those attributing to it serious results were chiefly found in the older writers, though some more recent ones had given them their sanction. He remarks that—

> The processes of tobacco making are not numerous nor complicated, but they vary according to the particular product required, whether cigars, smoking tobacco, or snuff. The first business is to sort the leaves, and is attended by the emanation of dust of no important physiological energy. The next is to soften them by damping with water; and when this—a harmless proceeding—is effected, the leaves pass into the hands of women and girls, who strip away the midribs. They are then ready for making into cigars by simple handiwork. But if tobacco for smoking be wanted, the leaves are cut up by machines, and afterwards subjected to a high temperature in shallow-heated pans, whereby the fumes of the plant are largely driven off; and, unless ventilation be very efficient, they will exert more or less pernicious influence upon the men engaged in the opera-

tion. The only remaining stage is the cooling of the tobacco by spreading it out in trays disposed on frames in the cooling-room.[a]

Arlidge refers to the article on the hygiene of tobacco manufacture contributed to the New York Medical Journal by Dr. E. T. Ely, in 1880, who speaks of the production of cough, pharyngeal catarrh, dyspepsia, and nervousness as incidental results of the employment. In the opinion of Arlidge, however, it must be taken into account that of the 102 tobacco workers examined by Ely, all were incessantly smoking, and carried on their labor in close, insanitary rooms, working long hours, and on the principle of piecework. Doctor Ely's conclusion was to the effect that, unless there existed a peculiar susceptibility, employment in tobacco making was as healthy as other occupations of a like sedentary character. In considering, however, the effects of the industry it is necessary to take into account the different occupations followed, and, in the opinion of Arlidge, the most prejudicial operations are those of drying the tobacco, of clearing the fermenting chambers, and of unloading the cases of snuff after its second fermentation. It is evident that Arlidge did not personally inquire to any very considerable extent into the different branches of the industry, but that his conclusions apply to the employment as a whole. He remarks that it is very difficult to reconcile the conflicting views respecting the maladies of workers in tobacco, and his own limited personal knowldege of the industry, in his own words, did not enable him to substantiate the serious conclusions of some of the writers on the subject. Arlidge did not sustain his observations or conclusions by statistical data, but it is evident that he agreed with those who were inclined to consider the industry as comparatively free from conditions and circumstances injurious to the health of the employees.

In 1895 a contributor to the Twentieth Century Practice of Medicine (Vol. III), in a monograph on the diseases of occupations, called attention to the wide difference of opinion on the subject of the evil effects of the manufacture of tobacco. This writer emphasized the importance of a proper consideration of the conditions under which the work is carried on and the wide difference in mortality resulting from variations in races, countries, and, above all, in hygienic and trade conditions. He further emphasized the fact that tobacco workers the world over do not live and work under identical conditions, and that into the question of their health and the influence of their occupation enter also considerations of personal and social hygiene. Occupation, in brief, is only one factor, and often only a minor one as the causation of disease in artisans. He stated further that—

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[a] Diseases of Occupations, by J. T. Arlidge, p. 390.

> The manner of absorption of the tobacco poison in the manufacture may be, presumably, by inhalation of dust and vapor, and by direct contact and absorption through the skin. The dust and vapor of the workshops are charged with the peculiar odor. Absorption by the skin is certainly possible. The physiological effects of tobacco can readily be obtained by the application of tobacco juice or of a strong decoction of the weed to the skin. I have seen a small dog made very ill by a tobacco-wash, used for killing fleas. It seems that workmen and workwomen, however, come in contact with tobacco only with the skin of the fingers and hands, and the absorbing power of the skin in these places is slight. There is no satisfactory evidence that work-people suffer in this way. Moreover, many of the work people use tobacco to excess, especially in the form of chewing or snuff, and the amount that they might absorb must be vastly in excess of what they could take in either by inhalation of vapors and dust or by contact with the hands.([a])

After summing up the widely conflicting views of the authorities on the subject, Doctor Lloyd himself did not arrive at more definite conclusions.

A more qualified and scientific inquiry into the subject was published in 1897, in Weyl's Handbook of Hygiene, in the form of a monograph on the hygienic conditions of the tobacco industry, by E. Schellenberg, grand ducal factory inspector for Baden. Schellenberg at the outset of his discussion calls attention to the higher degree of consumption frequency among tobacco workers in Baden compared with the general population. He refers to a statistical investigation made in two factory-inspection districts, based upon the observed excess in the mortality from consumption among cigar workers in particular localities. Whether the excess in the mortality from consumption was the result of the industry itself, or because of the fact that the industry attracted the weak and otherwise predisposed to consumption, was not clearly brought out by the official investigation. Schellenberg, however, states that from a social and economic point of view tobacco workers were at a decided disadvantage, and that their poverty and long hours of labor were more probably the causes responsible for the excess in the mortality from consumption than the conditions in the industry itself. He, however, concedes that tobacco dust is, in itself, a factor seriously detrimental to health; at the same time relatively large quantities of nicotine enter the system both through the dust and the insanitary habit of swallowing small particles of tobacco, which, being done persistently, amounts to a considerable quantity, with more or less serious results. Schellenberg finally contrasts the sanitary condition of large and modern factories with the more primitive and crude structures and conditions, warranting the conclusion that as a result of sanitary improvement a very material change for the better is possible in the conditions affecting the health and life of persons employed in the industry. As a most important sanitary improvement, he suggests effective methods of tobacco dust removal and adequate provision for light, air, and sanitary facilities.

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[a] Monograph by Dr. James Hendrie Lloyd, Twentieth Century Practice of Medicine, Vol. III, pp. 431, 432.

While the foregoing observations refer to the German cigar industry, they are equally applicable to American conditions. Of special importance in this connection are the official regulations governing the installation and operation of tobacco factories, which went into force for the German Empire under date of July 8, 1893, and which are printed in full in the treatise on industrial diseases by Sommerfield.(a)

The most recent authority on the diseases of persons employed in tobacco and cigar manufacture is Dr. Thomas Oliver, who, in his treatise on Dangerous Trades, published in 1902, remarks that—

> In the manufacture of tobacco for smoking it is generally conceded that during the chopping up of the leaves and their subsequent exposure to a high temperature in shallow vessels certain fumes are given off that are obnoxious to the workmen engaged in this operation, also that during the grinding of snuff irritating gases and dust are evolved. Apart from these, however, the industry is on the whole a healthy one. Some people have an idiosyncracy which causes them to be easily affected by tobacco. New hands on entering a tobacco factory for the first time often experience a good deal of nausea, headache, and giddiness, and they sometimes too have a sense of faintness, but by degrees they become accustomed to the odors. At the Newcastle Dispensary I am occasionally consulted by female tobacco-spinners on account of persistent headache, nausea, dislike to food, anæmia, and muscular feebleness. I have never observed the transient loss of sight nor the pharyngeal catarrh alluded to by some writers. Melier held the opinion that working in tobacco arrested tuberculous disease, but this is simply an opinion, and is uncorroborated by the experience of others. Poisson and Eulenburg take the opposite view, and maintain that tuberculosis is a very frequent disease indeed in tobacco workers, especially in females. In the lungs of tobacco-workers, both at home and abroad, there have been found pigmentation and patches of brown induration. Similar lesions have been observed in the lungs of animals experimentally exposed to tobacco dust; but at best these changes in the human subject must be regarded as of extremely rare occurrence, and are more than likely due to the inhalation of vegetable and mineral dusts which dry tobacco often contains. Given a healthy man or woman, and a well-ventilated factory provided with the proper means for removing dust

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[a] Handbuch der Gewerbekrankheiten, by Dr. Th. Sommerfeld, Vol. I, Berlin, 1898, p. 129.

and foul air, there is nothing in the manufacture of tobacco or in the making of cigars to cause the occupation to be regarded as one very prejudical to health.([a])

Oliver extended his studies to continental tobacco factories, including some of those in Spain, but his conclusions regarding the comparatively harmless character of tobacco dust remained unchanged. Oliver did not include in his consideration an extended analysis of the statistical data of the employment, which data, as will presently be seen, show a high mortality rate from consumption among workers in tobacco. From Ramazzini to Oliver the number of those who have written upon tobacco in its relation to health is very large, but the opinions vary so widely that while many of those who have written on the subject have made contributions of interest and value from a medical point of view, it is still an open question whether the employment as such really is or is not injurious to health, with special reference to conditions predisposing to a high mortality from tuberculosis.

A lady factory inspector, in the Annual Report of the Chief Inspector of Factories and Workshops for 1904, calls attention to the conclusions of Doctor Oliver, restated in the sentence that, "Given a healthy man or woman and a well-ventilated factory provided with the proper means for removing dust and foul air, there is nothing in the manufacture of tobacco or in the making of cigars to cause the occupation to be regarded as one very prejudicial to health." She observes further that—

> This is a guarded statement to which I think all would assent, but the chief requirement, "a well-ventilated factory provided with the proper means of removing dust and foul air," is seldom, in my experience, found in cigar factories. Directly the cold weather commences the windows are all closed, and if they do not fit tightly the cracks and crevices are stopped up with paper and rags, as cigar making being a preeminently sedentary occupation (with less movement or change of posture than in perhaps any other) the workers are very sensitive to draft. The plan of many of the rooms, open staircases leading into them from rooms below, or parti-walls having been removed and the whole floor thrown into one, makes them particularly difficult to ventilate by ordinary methods. I should suggest a fan as being the best means of ventilation for cigar-making rooms were it not that in most of these factories a fan would cause intolerable drafts unless some considerable structural alterations were carried out to protect the workers. Without the intelligent cooperation of the employers it would be impossible to ventilate these rooms and not at the same time cause discomfort and even injury to the workers.([b])

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[a] Dangerous Trades, by Thomas Oliver, 1902, pp. 793, 794.

[b] Report of the Chief Inspector of Factories and Workshops for 1904, p. 264.

While the foregoing account may state conditions somewhat dissimilar to those existing generally in the United States, it is safe to assume that in exceptional cases at least the sanitary conditions of small cigar factories in this country are not better than the corresponding conditions observed and reported upon abroad.

In recognition, however, of the unsatisfactory conditions reported upon from time to time by inspectors of the factory-inspection service, a special inquiry was made by two lady inspectors in 1906, which included a careful consideration of every branch of the industry and which is of particular interest in that it includes observations upon the hygiene of preliminary processes and the relation of the same to the health of persons employed therein. From this report are made the following brief extracts. The suggestions for practical remedial measures are more or less applicable to the solution of similar problems of tobacco-factory hygiene in the United States:

> Steaming processes are undoubtedly the roughest, the most disagreeable work, and the most likely to affect the health of the workers. The actual opening and stripping are generally speaking done in good rooms, and there is nothing objectionable in this work for women. It is in the steaming, and more especially where stripping is done in conjunction with steaming (the leaf being stripped while the steam is actually rising from it), that the most objectionable features are found. There are several different methods of steaming; the old-fashioned method is to lay the leaf on a trough (into which steam is turned) placed under a hood with a shaft for steam to escape, or preferably a fan. Another method is to feed the leaf into a huge revolving cylinder, through which the steam is poured, and the steaming leaf drops out at the other end. In one case we found that the steam which rises in great volume at the exit was successfully carried off by means of a specially constructed shaft and fan, in accordance with the suggestion of H. M. inspector, Miss Paterson. Another method, probably the most modern, is to feed onto a traveling sheet which passes through an inclosed steam chamber; where an exhaust fan is connected with this, and the machine is well made and carefully arranged, the result is good.
>
> After the tobacco has been cut or shredded, some of it is stoved, and so far as we know no women are employed on this process. The tobacco is laid on heated trays to reduce the amount of moisture; men are continually bending over these trays to toss and shake the tobacco about, and although a good deal of steam rises, we have found special means (other than roof ventilation) adopted for collecting and carrying off. The difficulty appears to be that the men must have ready access to the whole tray to constantly move about the tobacco, and for this purpose they are placed out in the middle of the room.
>
> This is invariably done by men, and is a very dusty process. A great deal of it seems to us unnecessary, as except where ground for commercial snuff, it is only ground for offal. In some cases we found special means of exhaust ventilation, in others no attempt was made to reduce the dust, which was in one case emptied on the floor after

being ground and shoveled with spades into sacks, causing clouds of irritating dust to rise. The men in this room did not look healthy.([a])

In connection with cigar making, it is stated that—

> Small pieces of leaf drop to the floors, which are frequently swept during the day by little girls employed solely for this purpose and to wait on the cigar makers. A fine brown dust arises and settles on walls, lamps, and tables. The class of women employed in cigar making is superior to those engaged in stripping and opening.([a])

With reference to ventilation, the report states that—

> By far the worst ventilated rooms we have found have been those in which cigar making is carried on; they are frequently very high, and when filled to the full extent permissible, the floor space is much overcrowded. Ventilation is by means of windows only—generally found closed. The work is very sedentary, and the draft from an open window falling on the workers is often intolerable. A great deal of gas is burned for lighting purposes, and a heavy atmosphere hangs over the heads of the workers, and is specially bad in the afternoons. In many of these cigar factories there is no power with which to drive a ventilation fan, although we think that the time has come when a small motor or gas engine for this purpose should be required. We found that the ventilation was also unsatisfactory wherever factories or workrooms were built on the gallery system, a method of architecture singularly undesirable for factories. The whole question of ventilation seems to have received less attention than might have been expected; the workers have in this respect been left much to their own devices, with the result that little use is made of the means provided, and all fresh air is carefully excluded.([b])

With a due regard to the conditions affecting health as ascertained by careful inquiry through trained inspectors, the final conclusion is a remarkable one, it being stated that "it is impossible to consider the industry an unhealthy one," and, further, that—

> With the exception of one or two processes, there has been little or no evidence to prove that the manufacture of tobacco is in itself injurious to health. We inquired carefully from doctors, managers, foremen, and the workers themselves, and we have only heard of 2 cases of nicotine poisoning, 2 cases of amblyopia, 1 case of smoker's heart, and 1 case of gastralgia, in the whole course of our inquiry, and some of these cases occurred two or three years ago. On the other hand there is distinct evidence of a considerable amount of discomfort and nausea when workers are first exposed to the fumes; in most cases this quickly passes without any permanent ill effect, but in some instances where there is a special idiosyncrasy, the worker is obliged to seek other work.([b])

The foregoing statement is the result of personal observation and inquiry, rather than of statistical data of health and mortality. The fact may possibly have been overlooked that a considerable proportion of men and women may be only temporarily, or for a short period of years, employed in one branch or another of the industry, and that removals from one locality to another may also interfere with inquiries made for the purpose of ascertaining the true and ultimate effect of the employment on health. The only particular occupation which it is admitted may be unhealthful is the steaming process, in which it is suggested that young women and girls should not be employed.

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[a] Report of the Chief Inspector of Factories and Workshops for 1906, pp. 250, 251.

[b] Idem, pp. 252, 253.

In the final summary of the conclusions arrived at as the result of the inquiry, and after first pointing out that in some of the largest factories visited a very complete system of preliminary examination was in vogue whereby the physically unfit were eliminated, while in other factories where such a system was not in vogue the class of labor was decidedly inferior, it is stated that—

> Our attention was drawn to a very interesting and important point by two of the doctors; their experience (which in one case had been tabulated) had led them to form the opinion that overtime has a very marked bearing on the normal health of the workers. They had noted an increase during and just after periods of overtime work of from one-third to one-half in the number of workers coming to them for treatment; the matters complained of were not anything special, but simply an increase in the usual form of ailment, such as indigestion, anæmia, heavy colds (in winter), gastric disorders in summer. When one considers that overtime here means simply employment up to the normal legal period, that is ten or ten and one-half hours a day, and does not mean overtime as permitted in a large number of industries (in the case of women over 18), and which extends to twelve hours' work in the day, the result is all the more striking, and one feels that a similar record in one of the industries in which overtime is allowed would produce more noticeable statistics of the results of overfatigue. The conclusion seems to us clear that eight and one-half to nine hours' work a day can not be exceeded by women and girls without overstrain and fatigue resulting in a lower standard of health.(a)

In 1905 a report was published by the Massachusetts state board of health of an investigation of the sanitary conditions of factories, workshops, and other places of employment, which included a brief consideration of the tobacco industry. Four factories were inspected, employing from 75 to 900 men and women, and the conditions observed were reported upon, in part, as follows:

> In the operation of making cigars a great deal of dust arises, and in the three largest establishments visited the atmosphere was exceed-

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(a) Report of the Chief Inspector of Factories and Workshops for 1906, p. 254. In this connection reference may be made to the Wisconsin law governing the construction, condition, and operations of cigar factories, reprinted in the Twenty-second Annual Report of the Commissioner of Labor, Labor Laws of the United States, p. 1424.

ingly bad from this cause and from overcrowding. In all three the sanitary arrangements were in most unsatisfactory condition. The habit of indiscriminate spitting was general, and it was noticed that many of the cigar makers completed each cigar with the aid of saliva. The possibility of disseminating loathsome diseases through this practice needs no extended discussion. Perhaps it would be fair to say that it is uncertain how long the germs of certain diseases which might appear to be transmissible in this manner may retain their vitality in contact with moist tobacco, but the idea is sufficiently revolting on æsthetic grounds alone. An objectionable practice, which obtains very generally and which should be the subject of some regulation, is the sale of sweepings. In the operation of making cigars considerable tobacco in larger or smaller pieces falls to the floor. At intervals these are swept up, sifted, and sold as fillings for cheaper cigars. Where the habit of promiscuous spitting prevails, the tobacco thus recovered is likely to be contaminated to some extent with disease organisms which may exist in the secretions of the mouth.([a])

The report concludes with the statement that in one small factory in the western part of the State the atmosphere in the workroom was kept pure by means of mechanical ventilating appliances. In this factory no spitting was permitted, and the ends of the cigars were finished with the aid of gum tragacanth rather than with the workmen's saliva.

That the degree of consumption frequency among workers in tobacco is excessive, at least in American experience, is made evident by statistical data derived from the experience of the Cigar Makers' International Union, quoted in some detail in an editorial by the president of that organization in the Cigar Makers' Official Journal of September 15, 1906. After the statement that, according to the United States census of 1900, cigar makers ranked next to stonecutters in the relative mortality from consumption, it was observed that in 1890, 49 per cent of the deaths in the Cigar Makers' Union were from consumption. Five years later—that is, in 1895—only 35 per cent were from this cause, and in 1900 the percentage was only 33, which by 1905 had been further reduced to 24 per cent.

The opinion was expressed in the editorial that "the direct cause for this great disparity is almost wholly due to low wages, long hours and insanitary shop and home conditions, caused by inability to procure proper food, clothing, and home conditions.([b])

This opinion is in accord with the views of many foreign authorities who have considered the sanitary conditions of employment in cigar factories and who attribute the relatively high death rate more to the conditions of work, neglect of sanitary precautions, long hours of labor, low wages, and employment of women and children, than to the tobacco dust itself or to the presence of nicotine in the atmosphere.

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[a] Thirty-sixth Annual Report of the State Board of Health of Massachusetts, p. xxvi.

[b] Editorial by G. W. Perkins, Cigar Makers' Official Journal, September 15, 1906, pp. 8 and 9.

Aside, however, from an improvement in the economic condition of union workmen, the writer above quoted readily concedes the necessity of sanitary regulation, concluding his remarks as follows:

> In addition to the many excellent suggestions set forth, as a means of prevention, we suggest that all factories should be put in proper sanitary condition and properly ventilated. All operatives should be arranged so that they all face in one direction; in many factories the benches or tables are so arranged that the operatives face each other and those suffering from tuberculosis, when sneezing or coughing, or even talking and breathing, do so directly in the face of those sitting opposite. An ordinance should be passed in every municipality and State providing that the operatives should all face in one direction. This is an important remedy and can be executed without any additional cost to the manufacturers and employers. Those who will not adopt this plan should be forced to do so. As long as we have unsanitary shop conditions and illy paid operatives and poorly ventilated tenement house districts, tuberculosis and other wasting diseases will exist.([a])

In 1907 the Massachusetts state board of health made a further report on the sanitary conditions of factories, etc., and in regard to cigar and cigarette making the conclusions were summarized as follows:

> In the manufacture of cigarettes the baled tobacco leaves are first separated from one another, and the different kinds are then mixed on the floor in a long, low pile, and swept together with a broom. From time to time, as more tobacco is added, the pile is sprayed with water. After standing several hours to "blend" the material is taken to the cutting machine. After being cut, it is shaken up on a broad bench to make it "stringy." In this process more or less tobacco dust is caused to fly about. The tobacco is then conveyed to the making room in zinc-lined boxes. Here it is rolled up in a bit of parchment paper, which, with its contents, is slipped into a paper tube, and then the parchment is withdrawn. The loose ends are then trimmed and the cigarette is ready for the drying room, where it is kept several days, in order to be brought to the required degree of dryness (or moisture). The paper tubes are stuck together with starch paste, to which a little wheaten flour is added.([b])

The foregoing observations are based upon the inspection of 134 cigar factories and 11 cigarette factories, including establishments of all sizes, from those employing fewer than five persons to those employing many hundred. As regards light, ventilation, and general sanitation, it was found that 127 establishments were reported as being in from fair to good sanitary condition, while in 18 the general conditions observed were moderately or distinctly bad, but in the industry as a whole certain highly objectionable practices were found to prevail extensively, it being stated that—

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[a] Editorial by G. W. Perkins, Cigar Makers' Official Journal, September 15, 1906, p. 9.

[b] Report of the Massachusetts State Board of Health upon the Sanitary Condition of Factories, Workshops, etc., 1907, pp. 49, 50.

> The spitting habit, for example, is especially common; and, apart from the danger to which the health of the employees is thereby exposed, is particularly to be deprecated, in view of the fact that in the processes of manufacture considerable tobacco falls to the floor, and these fragments, if not gathered up and used on the premises, are very commonly swept up with all the dirt, dried sputum, and other matter, and sold as filling for cheap cigars.([a])

The report very properly calls attention to the risk of disseminating loathsome diseases through the practice of finishing cigars with the aid of saliva, and it is stated further that in 18 factories the practice of biting off the end of the filler and inner wrapper with the teeth was also observed. In a number of factories there was much overcrowding, some were very dusty, some very dirty in every part, and some extremely hot and foul smelling. A fairly large proportion of the employees were found to look pale and sickly, and in some of the larger factories this proportion was noted as about one-tenth.

The Massachusetts investigation proves conclusively the necessity of thorough and qualified inquiry into the actual facts, rather than reliance upon broad generalization, more or less inapplicable to the industry in all its parts.

In the occupation mortality statistics of the Twelfth Census it is shown that of the 478 deaths of male cigar makers of known ages reported in the registration States, 122, or 25.5 per cent, were from consumption, and 80, or 16.7 per cent, were from other respiratory diseases. The census comparative death rates from all causes were as follows:

MORTALITY FROM ALL CAUSES AMONG CIGAR MAKERS AND TOBACCO WORKERS, COMPARED WITH THAT OF THE MANUFACTURING AND MECHANICAL CLASS AND THE MERCANTILE AND TRADING CLASS IN THE REGISTRATION STATES, 1900, BY AGE GROUPS.

[From report on Vital Statistics, Twelfth Census of the United States, 1900.]

Age at death.	Death rate per 1,000 among—		
	Cigar makers and tobacco workers.	The manufacturing and mechanical class.	The mercantile and trading class.
15 to 24 years	5.85	4.43	2.60
25 to 44 years	14.59	8.35	6.72
45 to 64 years	30.97	20.16	19.91
65 years and over	120.61	105.43	93.79

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[a] Report of the Massachusetts State Board of Health upon the Sanitary Condition of Factories, Workshops, etc., 1907, pp. 49, 50.

According to this table, the death rate of cigar makers and tobacco workers at ages 15 to 24 was 5.85 per 1,000, compared with 4.43 for men in the mechanical and manufacturing class and 2.60 for the mercantile and trading class. At the other specified ages the mortality from all causes among tobacco workers was considerably in excess of that in the other two selected groups of occupations.

In Rhode Island, out of 115 deaths of cigar makers recorded during the period 1852 to 1906, 46, or 40 per cent, were from consumption, and 10, or 8.7 per cent, from other respiratory diseases.

Regarding tobacconists, which term includes all persons employed in tobacco manufacture, the report of the registrar-general on the occupation mortality of England and Wales for 1900 to 1902 contains the following:

> There were enumerated at the last census 17,607 males above the age of 15 years, of whom 17,192 were occupied; the latter being an increase of 37 per cent on the number enumerated at the previous census. At all age groups up to 35 years the mortality of tobacconists exceeds that of occupied and retired males generally, and at ages 45 to 55 the rates are about equal. At the higher ages the death rates of tobacconists are below the standard. Their comparative mortality figure is 962, or 4 per cent below the average for occupied and retired males. The mortality of tobacconists from cancer, circulatory diseases, and suicide is considerably below the standard, and they are remarkably free from fatal accidents. From alcoholism and liver disease, from nervous diseases, from phthisis, and from Bright's disease, however, they suffer excessive mortality.([a])

The most recent English mortality statistics for male tobacco workers include 646 deaths from all causes occurring during the three-year period ending with 1902. Of this number of deaths, 145, or 22.4 per cent, were from consumption and 125, or 19.3 per cent, were from other respiratory diseases, which combined give 41.7 per cent of the total mortality from diseases of the lungs and air passages. In the table which follows a comparison is made of the mortality from all causes among men in this group with that of occupied males generally, and the result is suggestive of conditions in these trades unfavorable to health and life at ages under 35.

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[a] Part II. Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. liii. London, 1908.

MORTALITY FROM ALL CAUSES AMONG TOBACCO WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for tobacco workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.76	+ 0.32	113
20 to 24 years	4.41	5.88	+ 1.47	133
25 to 34 years	6.01	6.76	+ 0.75	112
35 to 44 years	10.22	9.28	− .94	91
45 to 54 years	17.73	17.21	− .52	97
55 to 64 years	31.01	28.89	− 2.12	93
65 years and over	88.39	67.83	−20.56	77

The death rates of men employed in tobacco manufacture are below the general average at ages over 35, but the difference is small except at ages 65 and over when the number of persons employed is too small to make the death rates trustworthy.

In the table which follows the mortality from consumption and from respiratory diseases other than consumption among male tobacco workers is compared with the normal mortality of occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption was above the average at ages 20 to 54. The mortality from other respiratory diseases was excessive at ages 15 to 24 and at ages 35 to 54.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG TOBACCO WORKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for tobacco workers.			Death rate per 1,000 for all occupied males.	Death rate for tobacco workers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.44	−0.10	81	0.24	0.29	+0.05	121
20 to 24 years	1.55	3.09	+1.54	199	.48	.59	+ .11	123
25 to 34 years	2.03	3.54	+1.51	174	.77	.69	− .08	90
35 to 44 years	2.74	3.43	+ .69	125	1.66	2.23	+ .57	134
45 to 54 years	3.04	3.68	+ .64	121	3.32	3.55	+ .23	107
55 to 64 years	2.16	2.03	− .13	94	6.54	5.19	−1.35	79
65 years and over	1.11	.48	− .63	43	17.77	17.44	− .33	98

The following statistics from the occupational mortality returns of Switzerland indicate that tobacco workers in that country experience an excessive mortality from consumption at ages 40 and over, but at the younger ages the mortality from that cause is considerably less than that of all occupied males:

MORTALITY FROM CONSUMPTION AMONG TOBACCO WORKERS AND CIGAR MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[Figures from Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for tobacco workers and cigar makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	1.30	0.83	−0.47	64
20 to 29 years	3.04	2.00	−1.04	66
30 to 39 years	3.66	3.35	− .31	92
40 to 49 years	3.65	4.22	+ .57	116
50 to 59 years	3.52	4.01	+ .49	114
60 to 69 years	3.25	3.55	+ .30	109
70 years and over	1.84			

The recorded industrial insurance mortality statistics of tobacco workers include three groups of employees: Tobacco workers not otherwise specified, tobacco and cigar dealers, and cigar and cigarette makers and packers. The industrial insurance mortality statistics of tobacco workers not otherwise specified, include 141 deaths from all causes, of which 49, or 34.8 per cent, were from consumption. Of the mortality of this group from other respiratory diseases 7 were from pneumonia, 3 were from asthma, 3 from bronchitis, and 1 from another respiratory disease. If the deaths from consumption and from other respiratory diseases are combined, it is found that 44.7 per cent of the mortality was from diseases of the lungs and air passages. The mortality from consumption was excessive at all ages, as is set forth in detail in the following tabular analysis:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **TOBACCO WORKERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for tobacco workers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of tobacco workers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Tobacco workers.	Males in registration area, 1900 to 1906.
15 to 24 years	28	10	35.7	27.8
25 to 34 years	31	15	48.4	31.3
35 to 44 years	26	11	42.3	23.6
45 to 54 years	21	8	38.1	15.0
55 to 64 years	21	4	19.0	8.1
65 years and over	14	1	7.1	2.7
Total	141	49	34.8	14.8

The recorded industrial insurance mortality statistics of tobacco and cigar dealers include 196 deaths from all causes, of which 43, or 21.9 per cent, were from consumption. Of the mortality of this group from other respiratory diseases 23 were from pneumonia, 7 from bronchitis, 6 from asthma, and 1 from another respiratory disease. If the deaths from consumption and from other respiratory diseases are combined, it is found that 40.8 per cent was from diseases of the lungs and air passages.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **TOBACCO AND CIGAR DEALERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for tobacco and cigar dealers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of tobacco and cigar dealers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Tobacco and cigar dealers.	Males in registration area, 1900 to 1906.
15 to 24 years	14	5	35.7	27.8
25 to 34 years	34	15	44.1	31.3
35 to 44 years	35	12	34.3	23.6
45 to 54 years	29	4	13.8	15.0
55 to 64 years	40	4	10.0	8.1
65 years and over	44	3	6.8	2.7
Total	196	43	21.9	14.8

The recorded industrial insurance mortality statistics of cigar and cigarette makers and packers include 1,530 male deaths from all causes, of which 442, or 28.9 per cent, were from consumption. Of the mortality of this group from other respiratory diseases, 118 were from pneumonia, 22 from bronchitis, 16 from asthma, and 24 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 40.7 per cent of the mortality of cigar and cigarette makers and packers was from diseases of the lungs and air passages. The consumption mortality of this group of male workers was excessive at all ages, as is set forth in detail in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **CIGAR MAKERS AND PACKERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for cigar makers and packers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of cigar makers and packers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Cigar makers and packers.	Males in registration area, 1900 to 1906.
15 to 24 years	131	57	43.5	27.8
25 to 34 years	267	147	55.1	31.3
35 to 44 years	281	119	42.3	23.6
45 to 54 years	325	67	20.6	15.0
55 to 64 years	284	36	12.7	8.1
65 years and over	242	16	6.6	2.7
Total	1,530	442	28.9	14.8

The preceding observations and statistical data, derived from both American and foreign sources, clearly indicate that tobacco workers are subject to an excessive mortality from consumption and from other respiratory diseases.

THE MANUFACTURE OF SNUFF.

The manufacture of snuff in the United States was carried on in 41 establishments, employing 946 wage-earners in 1905, according to the returns of the factory census for that year.

In an earlier special report on the industry, made as part of the census of 1900, the process of snuff manufacture is described in part as follows:

> The making of snuff is the most complicated of all the processes of tobacco manufacture. This article, as found on the market, may be roughly divided into two classes, namely, dry and moist, each of which varies greatly in quality. Snuff is sometimes manufactured in connection with cigars and chewing tobacco, as it affords an opportunity to utilize the parts of the leaf not consumed in those products. The material for dry snuffs is first dampened and put through cutting machines, which chop it finely. It is then subjected to a high temperature and rendered perfectly dry, when it is ready for grind-

ing. The grinding machines preserve much of the principle governing the first manufacture of snuff, which was reduced to a rough powder by pounding or grating. The commonest form of grinding machine consists of a receptacle shaped like the frustum of a cone inverted. A set of rollers of corresponding inclination revolve close to the inner surface, grinding the tobacco between to a fine powder. The finished article is packed by machine packers into bladders, tin cans, earthenware jars, glass tumblers, etc. Scotch, Irish, and Welsh snuffs are the commonest forms of the dry class.

Moist snuffs are of infinite variety. The material used in their manufacture is moist when ground, and is not reduced to a fine powder like the dry snuffs. After grinding, the "flour" is subjected to as many different processes and manipulations as there are manufacturers. Many of these involve frequent handling and bulking to control the different stages of sweating or fermentation which gives character to the finished article, darkening it and developing its peculiar flavor. In addition to saucing, fermentation, and manipulation, ingredients are added to flavor and perfume.([a])

The foregoing descriptive account emphasizes the more important factors detrimental to health, chiefly, of course, the production of considerable quantities of very fine tobacco dust, practically unavoidable under the conditions under which the industry is carried on at the present time. Of all the products of tobacco snuff requires the most complicated processes of manufacture, which vary only according as the article produced comes under the head of dry or moist, but because of the fact that it is possible to utilize much waste material in producing snuff it is frequently made in connection with cigars and chewing tobacco. In brief, the health-injurious circumstances incidental to the manufacture of tobacco are emphasized in the manufacture of snuff, and most of the authorities on occupation diseases lay much stress upon this fact, which was early recognized by Ramazzini, when, however, this branch of the industry was the most important instead of being of very limited extent, as it is at the present time.

Thackrah refers to the occupation in a brief statement, holding that snuff making is more pernicious than tobacco manufacture in general, and that the fine dust, combined with muriate of ammonia and other substances, produces disorders of the head, the air tubes, and the stomach.

In another descriptive account of the industry as carried on in New York, the assistant inspector of the board of health, reported, in 1872, that—

In one of the largest manufactories in the city (Lorillard's), the atmosphere of the room in which the snuff is packed in bags is so full of flying particles as almost to be opaque, and I could not remain inside, even a few seconds, without experiencing the most violent irritation of the whole respiratory mucous membrane; and yet, in this atmosphere, inhaling with every breath thousands of particles of a most irritating powder, works a man, who has been employed in the same way, day after day, for twenty years, and he assured me that he had not had a day of sickness, and that he was, in every way, in perfect health. His face was so smeared with yellow snuff that I could not discern if his complexion were natural or not; but he told me his appetite was excellent, and all his bodily functions were carried on with perfect regularity.(a)

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 672.

Dr. B. W. Richardson, in his lectures on "Unhealthy trades," before the Society of Arts, in 1872, referred to the manufacture of snuff as a health-injurious occupation, at considerable length, his remarks in full being as follows:

The dust produced in the various processes of snuff making is still more injurious [than that in cigar making]. The tobacco leaf, finely cut up, is mixed with lime-water, salt, sometimes even floor-dust sweepings, and, in yellow snuff, with red lead. These ingredients placed in a bin and heated two or three times to give sharpness to the snuff, are frequently turned over, in order to facilitate the process of drying. While this turning is in progress, there arises a dust with a smoke, which affects the younger workmen, so that they become faint and vomit, until, by use, they are rendered tolerant of the poisonous matters they inhale. In the further process of finishing the snuff, after it has been ground and dried, there is a practice of what is called sifting, preparatory to adding "liquor"—namely, salt and water—to make weight, and scents to give perfume. The sifting charges the air with dust, which is as injurious as the smoke, and which produces the same symptoms in the young—namely, retching, faintness, and great irritation of the bronchial passages. The rooms in which these works are carried on are too often close and unventilated, and thereby the irritation of the throat, the cough, and the nausea are much increased. Sifting the "shorts" is more hurtful than rolling the cigar. The consolation of the workman is that he gets accustomed to the poison, if he only keeps to the work, and at last gets over the symptoms. In so far as the acuteness of the symptoms is concerned, he is generally correct in this respect, but it is not to be presumed that the mischief stops at this point. The system of the workman becomes tolerant in some measure, but the tolerance is partial only. Chronic maladies are induced by continued application, which are of serious and even fatal import. Those workmen who are disposed to pulmonary consumption suffer readily from that disease, and in others of better constitution, less serious, but still serious derangements are manifested, the most common of which are a persistent dyspepsia and that pale and bloodless condition to which the technical term anæmia is applied by the physician. Another common symptom is a rapid and irregular action of the heart. Palpitation of the heart and intermittent action, in which the organ hesitates in its beat, are marked phenomena. I think I may indeed say that in these workmen the action of the heart is never at its full power,

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[a] Third Annual Report of the Board of Health of the City of New York, 1873, pp. 309, 310.

never perfectly regular so long as they are following their employment. In cases where the chronic effects are most intense, the muscles of the body share in the feebleness and disturbance. The hands become tremulous, the lower limbs unsteady. In two examples, I have seen the breathing muscles influenced, and a peculiar spasm of an extremely painful kind produced through the chest, followed by a faintness, as if the sufferer were about to die. Lastly, the organs of the senses become impaired from these occupations, and there is deafness and imperfect vision, so that light becomes extremely painful to the eye. It is unfortunate that this occupation leads often to abuse in the habits of smoking and chewing tobacco. When this occurs, the evil consequences are greatly increased. I believe few workmen escape altogether the dangers I have named. Not many are able to carry on their business beyond the fortieth year.([a])

The views of other authorities on the diseases of trades concur more or less in the foregoing opinions, summarized in the statement that the very considerable amount of dust produced in snuff manufacture is unquestionably detrimental to health, at least in the case of those who continue the employment for a long period of time. No statistical data are available to sustain these conclusions, but the large amount of available information regarding workers in tobacco generally would seem to support the point of view that the manufacture of snuff is detrimental to health and a more or less predisposing factor to consumption by the constant irritation of the respiratory passages, followed by a decrease in the vital resistance generally.

LEATHER WORKERS.

The manufacture of leather in all its branches gives employment to over a quarter of a million wage-earners, estimated by the census of 1900 as 251,920, of which 52,109 were engaged in leather tanning, currying, and finishing. The tendency of the industry is toward consolidation, as is made evident by the fact that the census of 1880 returned 5,426 establishments, the census of 1890 returned 1,749, and the census of 1900 returned 1,306. The amount of capital invested, the cost of materials used, and the value of the products have considerably increased during the intervening period. The changes which have occurred and which have an immediate bearing upon the health conditions in the various trades involved, are briefly referred to in the census reports, it being stated that—

It is a curious feature of the business that, while in nearly every other industry advantage has been taken of labor-saving devices as they have been perfected, leather manufacturers were inclined, until about 1880, to discourage any attempt to supersede manual labor with machinery. They preferred, also, to adhere to the formulas and tanning processes which had been handed down for generations from father to son, rather than to take advantage of the scientific knowledge which the chemists had to offer them in the way of improved and more economical methods. As a result of these prejudices, the evolution of the business, until recently, was very slow. During the past twenty years, however, the most radical changes have taken place, so that this industry has been completely revolutionized, and the up-to-date leather manufactory is now equipped with numerous appliances for manipulating the hide during the various stages through which it passes from the lime vat to the leather stretching and measuring machines. Many patented processes and compounds for tanning and tawing, as well as for depilating hides and skins, are also in use, so that it may be said with truth that the present-day leather manufacturer is no less enterprising in the use of what modern invention has to offer him than the leaders in any other line of productive industry. ([a])

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[a] Scientific American Supplement, March 4, 1876, p. 154.

The tanner has now at his command mechanical appliances for carrying the work through the various stages from the beam house to the final measuring of the material, as in the case of upper leather, preparatory to its shipment to the customer. The bark mill, that most important adjunct to the tanner using oak, hemlock, or union tannages, has undergone much improvement of late years. The present saw grinders or cutters overcome defects which were common to bark mills of a few days ago, while the resultant material is so leached that the utmost of its tannin is extracted, which was not formerly the case. In the handling of the hides, the reel, the rocker handler, the skeleton drum, and other labor-saving devices have done their part toward simplifying the work and reducing the cost. The processes subsequent to the removal of the leather from the bath have also been rendered less laborious and less costly by the introduction of mechanical scrubbers, power rollers, scouring and stuffing wheels, stretchers, etc. ([b])

Under modern conditions the processes of tanning, currying, and leather finishing are less injurious to health and life than they must have been under former conditions when the methods of manufacture were more arduous as well as more offensive. Ramazzini, in his Treatise of the Diseases of Tradesmen, observed that in consequence of exposure to odors and foul exhalations the complexion of tanners was deathlike, their bodies were puffed up, and their breathing was difficult. Thackrah, writing in 1832, remarks that—

They [tanners] work in an atmosphere largely impregnated with the vapor of putrifying skins, and this combined with the smell of lime in one place, and of tan in another. They are exposed constantly to wet and cold. Their feet are scarcely ever dry. Yet they are remarkably robust; the countenance florid; and disease almost un-

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 704.

[b] Idem, p. 713.

> known. Tanners are said to be exempt from consumption. We have carefully inquired at several tan-yards, and could not hear of a single example of this formidable disease. We do not find old men actually in the employ; and the reason assigned is, not the decline of health, but the inferiority of men past middle age, in undergoing the labor of the process. Persons, however, in advanced life, yet healthy, are found in other occupations, who have before been for many years in the tan-yards, and have not apparently suffered from the long-continued exposure to their offensive odor. Hence we may infer that this employ, while it invigorates the constitution in youth and middle age, does not sensibly shorten life; does not, in other words, give temporary health at the expense of premature decline.([a])

This favorable statement regarding the occupation is not sustained by the facts of actual experience, although Thackrah quotes Doctor Dods, who, in the Medical Gazette, had stated that he had "not been able to discover one unequivocable instance of death to have taken place in an operative tanner from phthisis, in its tubercular form, in any part of this Kingdom," and who attributed this alleged exemption of tanners from consumption to the peculiar aroma of volatile matter constantly arising from the tan pits, as the result of which tanners, in his opinion, were exempted from consumption.

Doctor Halfort, a German authority on the diseases of trades, writing in 1845, included curriers and similar occupations among the exceptionally healthful trades, stating in particular that phthisis was practically unknown among them, but apparently basing his conclusions entirely on Thackrah's observations.([b])

The same opinion was held by Wynter, who, writing in 1860, observed that "tanners are rarely, we believe, attacked with phthisis."([c])

Arlidge, writing in 1892, observes, with respect to curriers, that—

> The business of the currier is one of simple mechanical work, and is for the most part pursued in conjunction with that of tanning and leather-dressing. The operation consists almost entirely of strong rubbing of the leather on a table with a wooden tool, whereby the "grain" is raised; at the same time a grease is rubbed in until it penetrates the substance at all points. When a black color is required, lamp-black mixed with oil and size is employed. Other colors are got by various chemical compounds, some of which probably are not quite innocent. Nevertheless, the work of the currier may be pronounced free from any distinct injury to health. It entails active movement of the arms, and a constant bending forward of the trunk in the act of rubbing.([d])

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[a] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 61.

[b] Diseases of Artisans, by A. C. L. Halfort, M. D., 1845, p. 283.

[c] Curiosities of Civilization, p. 514.

[d] Diseases of Occupations, by J. T. Arlidge, p. 219.

The same writer, however, observes that in the business of leather dressing and coloring where the red color is required there is danger of arsenical poisoning; and again in the varnish or enamel for dress shoes lead is a constituent, and consequently a possible source of plumbism to those who apply it on the leather, as well as to those who prepare it. In none of these occupations does there appear to be a decided exposure to health-injurious dust.

Leather making in its various branches was later considered by Parry, who describes the various operations, but the dangers which may arise in the course of manufacture are held to be limited to (1) anthrax, (2) lead poisoning, (3) arsenical poisoning, and (4) poisoning by various gases. Apparently there is no particular exposure to health-injurious dust.

A very important report upon the effect of occupation on the health and duration of trade life of men employed in the leather industry was published by the New Jersey bureau of labor statistics, in 1894, including observations upon 1,124 wage-earners, subdivided into japanners (258), leather makers (198), curriers (125), beamsmen (111), tanners (194), splitters (76), grainers (38), tackers (33), buffers (14), shavers (6), softeners (22), and finishers (49). In commenting upon the statistical results of the investigation, it is pointed out that tanning is mostly hand labor and very laborious. While in some departments the workmen are subject to dampness, they are rugged and seem to be no more liable to colds than workmen in any ordinary occupations. The odor arising from the material used is disagreeable to those not accustomed to it, but there are no substances used that are deleterious to health. On the contrary, the lime, oil, and bark used are considered beneficial to health; and finally, that "there is little or no dust in any of the processes."

In 1907 the Massachusetts state board of health published a report on the sanitary conditions of factories, etc., and included the manufacture of leather, of which the various processes are described at some length, it being pointed out that the leather industry is one that calls for strength and endurance, and that all of the processes demand the services of men of good physical strength. The report concludes with the statement that—

> In the various processes of drying, stretching, stuffing, hand-whitening, blacking, and polishing there are no features which are intrinsically dangerous to health in any way; but the process of buffing on wheels or revolving drums covered with sandpaper gives rise to considerable dust, which, even when exhaust fans are installed for its removal, escapes in most instances to a greater or lesser extent into the air of the room. In one of the establishments visited, for example, where every part was found to be kept scrupulously clean and neat, and where the beam house, ordinarily a most offensive

place, was conspicuously clean and free from objectionable odors, the air of the buffing room was filled with fine dust.([a])

This reference to dust exposure in the particular process of buffing, which is characteristic of the manufacture of chrome-tanned leather, is the first in the literature of occupation diseases. It is stated in the report that "8 tanning establishments, employing from 28 men in one instance to 1,100 in another, and about 2,300 in all, showed conditions which in the least pretentious were at least fairly commendable, and in the most approved were as praiseworthy as those met with in cleaner occupations. The business is one in which overcrowding is hardly possible and free ventilation most desirable; and, as is to be expected in a nondusty trade requiring strength and endurance, the employees are healthy appearing and well nourished. The only objectionable conditions noted were the dusty atmosphere incident to buffing, and exposure to fumes of naphtha, amyl acetate, and wood alcohol."([b])

That the exposure to dust in the buffing process is a very serious one is made evident by the consideration which has been given to the subject by fire insurance companies, who have instituted special investigations to ascertain, if possible, the fire hazard attaching to the buffing dust of chrome-tanned leather, several fires having occurred which apparently had their origin in the dust generated in connection with this process of manufacture.

A brief reference may be made to the danger from anthrax, which is a more serious one than generally assumed. The risk is referred to by most of the authorities on occupation diseases, and at some length by D'Arcy Power, in Oliver's Dangerous Trades, and by W. H. Hamer, in an article contributed to the same work.([c]) In a paper read in 1898 before the American Public Health Association in Philadelphia, by Dr. M. P. Ravenel, it is stated that in 1897 "from reports which I have not been able to entirely verify, it is likely that so many as 12 men and 60 head of cattle died of anthrax near tanneries in this State [Pennsylvania] during the year."([d]) According to statements made by state medical inspectors of Pennsylvania there were four deaths from anthrax among the employees of the Falls Creek tannery, at Falls Creek, near Clearfield, Pa., attributed to the handling of hides imported from China, and similar cases were reported from Proctor, Lycoming County, Pa., and other localities.([e]) Since one of the characteristics of anthrax infection, as disclosed by post-mortem examination, is the enlargement of the spleen, it is quite probable—from the reference which Ramazzini in 1670 made to the fact, as observed by him at that time, that most of the tanners were "splenetick"—that anthrax, under the earlier and much less sanitary conditions, was very much more common among tanners than it is at the present time. While the mortality from this disease among tanners is small, it is nevertheless an occupation risk of very material importance.

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[a] Report of the Massachusetts State Board of Health upon the Sanitary Condition of Factories, Workshops, etc., 1907, p. 116.

[b] Idem, p. 117.

[c] Dangerous Trades, by Thomas Oliver, pp. 244, 621–633.

[d] "Anthrax.—The influence of tanneries in spreading the disease," by M. P. Ravenel, Philadelphia Medical Journal, April 22, 1899, p. 897.

[e] Reports of the State Board of Health of Pennsylvania for 1897 (pp. 90, 104, 589) and for 1898 (p. 158).

The census mortality statistics for 1900 return 206 deaths of leather makers. In the mortality from all causes the death rate was comparatively low at all ages, as shown in detail in the following table:

MORTALITY FROM ALL CAUSES AMONG **LEATHER MAKERS**, COMPARED WITH THAT OF THE MANUFACTURING AND MECHANICAL CLASS AND THE MERCANTILE AND TRADING CLASS, IN THE REGISTRATION STATES, 1900, BY AGE GROUPS.

[From report on Vital Statistics, Twelfth Census of the United States, 1900.]

Age at death.	Death rate per 1,000 among—		
	Leather makers.	The manufacturing and mechanical class.	The mercantile and trading class.
15 to 24 years	3.5	4.4	2.6
25 to 44 years	7.8	8.4	6.7
45 to 64 years	19.7	20.2	19.9
65 years and over	94.2	105.4	93.8

From the above table it is shown that at ages 15 to 24 the general death rate of leather makers was 3.5 per 1,000, compared with 4.4 for the manufacturing and mechanical class and 2.6 for the mercantile and trading class. At the other ages also the comparison is favorable to leather makers.

The recorded industrial insurance mortality statistics of leather workers include 641 deaths from all causes, of which 206, or 32.1 per cent, were from consumption. Of the mortality of leather workers from respiratory diseases other than consumption, 62 were from pneumonia, 11 from bronchitis, 6 from asthma, and 10 from less frequent respiratory diseases. If the deaths from consumption and from respiratory diseases other than consumption are combined, it is found that 46.0 per cent of the mortality of leather workers was from diseases of the lungs and air passages. While, therefore, the general death rate among leather workers is shown to compare favorably with other manufacturing industries, the mortality from consumption and from other respiratory diseases among leather workers is shown to be somewhat excessive, due probably, in part at least, to the inhalation of animal dust. The following tabular analysis of the industrial insurance mortality statistics shows in detail the proportionate mortality from consumption among leather workers by divisional periods of life. While the proportionate mortality from consumption was excessive among leather workers at all ages under 65, the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 50 were due to consumption, against an expected normal proportion of 31.3 per cent. The analysis of the consumption mortality of leather workers is set forth in detail in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG LEATHER WORKERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for leather workers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of leather workers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Leather workers.	Males in registration area, 1900 to 1906.
15 to 24 years	92	35	38.0	27.8
25 to 34 years	154	77	50.0	31.3
35 to 44 years	155	55	35.5	23.6
45 to 54 years	99	29	29.3	15.0
55 to 64 years	79	9	11.4	8.1
65 years and over	62	1	1.6	2.7
Total	641	206	32.1	14.8

The preceding observations and statistical data are more or less inconclusive except the insurance mortality experience, which clearly indicates a decided excess in the mortality from consumption among leather workers at all ages under 65. In the absence of a thoroughly qualified and extensive investigation, it is impossible to state how far the higher death rate is the direct result of dust exposure, but there can be no doubt that the dust problem in some branches of the industry is a serious one from a sanitary point of view. It is necessary, however, to keep in mind that intemperate habits prevail to a considerable extent among leather workers, and in particular among tanners, but this evil, in itself, does not account for the higher mortality brought out by the recorded insurance experience data.

TANNERS, CURRIERS, AND BEAMERS.

The statistics thus far given relate to leather workers in general. There is statistical information, however, for certain leather trades, including tannery employees and harness and saddle makers. In the first class are included tanners, curriers, beamers, etc. In Rhode

Island, during the period 1852 to 1906 there were 66 deaths recorded of tanners and curriers, and of this number only 6, or 9.1 per cent, died from consumption, and 5, or 7.6 per cent, from respiratory diseases other than consumption. These statistics, therefore, indicate a favorable mortality experience in Rhode Island for tanners and curriers.

Regarding tanners, the report of the registrar-general on the occupation mortality of England and Wales for 1900 to 1902 contains the following:

> At the earlier and later ages the mortality of tanners differs little from the standard for all occupied and retired males, but between the ages 20 and 45 it falls considerably below the average. In the main working period of life the comparative mortality figure is 774, or 23 per cent below the standard. The mortality of tanners from Bright's disease and from suicide appears to be slightly above the average, but under every other heading the mortality is low.[a]

The most recent English mortality statistics for tanners indicate that this branch of the leather industry is quite satisfactory as regards the mortality from all causes. The general death rate compares favorably with that for all occupied males, as is indicated in the following table:

MORTALITY FROM ALL CAUSES AMONG TANNERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for tanners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.51	+0.07	103
20 to 24 years	4.41	3.27	−1.14	74
25 to 34 years	6.01	3.83	−2.18	64
35 to 44 years	10.22	5.77	−4.45	56
45 to 54 years	17.73	15.07	−2.66	85
55 to 64 years	31.01	30.87	− .14	100
65 years and over	88.39	89.45	+1.06	101

The preceding table is self-explanatory and requires no further comment. A more extended comparison, however, is made in the next table, in which the mortality of tanners from consumption and other respiratory diseases is compared with the normal mortality of occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption among tanners is somewhat excessive at ages 15 to 19 and 45 to 64;

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[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxv. London, 1908.

at ages 20 to 44 the mortality from consumption is somewhat less than for all occupied males. The differences are comparatively slight at all ages, and the same is true of the mortality from respiratory diseases other than consumption.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG TANNERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for tanners.			Death rate per 1,000 for all occupied males.	Death rate for tanners.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years....	0.54	1.12	+0.58	207	0.24	0.56	+0.32	233
20 to 24 years....	1.55	1.26	− .29	81	.48	1.51	+1.03	315
25 to 34 years....	2.03	1.13	− .90	56	.77	.43	− .34	56
35 to 44 years....	2.74	.90	−1.84	33	1.66	1.62	− .04	98
45 to 54 years....	3.04	4.17	+1.13	137	3.32	2.55	− .77	77
55 to 64 years....	2.16	2.34	+ .18	108	6.54	8.60	+2.06	131
65 years and over	1.11	....	....	....	17.77	16.03	−1.74	90

Curriers are considered separately from tanners in the English mortality statistics, and the mortality of this group of leather employees is somewhat higher than for tanners in the English experience.

Considering curriers as a separate occupation, including under this term leather goods makers generally, the report of the registrar-general on the occupation mortality of England and Wales for 1900 to 1902 contains the statement that—

> Speaking generally, the death rates of curriers do not differ widely from those of all occupied and retired males, being slightly below the standard at ages 15 to 20 and 25 to 45, and above the standard at other ages. At ages under 20 the death rate of curriers is lower, and at ages 20 to 25 it is higher than that of tanners or furriers, but at ages above 25 the rates occupy an intermediate position between the two. In the main working period of life the comparative mortality figure is 1,015, or within 1 per cent of the standard for occupied and retired males generally, while it is 31 per cent above the corresponding figure for tanners, but 24 per cent below that for furriers. As with the ages at death, so with the causes of death, the mortality of curriers differs but little from the standard; they show, however, a slight excess of mortality from phthisis, Bright's disease, and suicide, but a low mortality from accident.(a)

In the table which follows, the mortality from all causes among men in this group is compared with that of occupied males generally,

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[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxvi.

and it is shown that at the higher ages, 45 and over, the death rate of curriers is higher than for occupied males generally, but at ages under 45, except 20 to 24, the general death rate is somewhat lower for curriers than for occupied males generally.

MORTALITY FROM ALL CAUSES AMONG **CURRIERS,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for curriers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.36	−0.08	97
20 to 24 years	4.41	5.24	+ .83	119
25 to 34 years	6.01	5.71	− .30	95
35 to 44 years	10.22	9.32	− .90	91
45 to 54 years	17.73	18.23	+ .50	103
55 to 64 years	31.01	34.95	+3.94	113
65 years and over	88.39	97.99	+9.60	111

A more extended analysis is made in the next table, in which the mortality of curriers from consumption and from other respiratory diseases is compared with the normal mortality of occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption is somewhat excessive at all ages except 25 to 34, and that the excess is most marked at ages 65 and over. As regards the mortality from respiratory diseases other than consumption, the differences are less marked, but at ages 55 to 64 the excess mortality was 2.04 per 1,000.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **CURRIERS,** COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for curriers.			Death rate per 1,000 for all occupied males.	Death rate for curriers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	0.54	0.92	+0.38	170	0.24	0.21	−0.03	88
20 to 24 years	1.55	2.22	+ .67	143	.48	.40	− .08	83
25 to 34 years	2.03	1.98	− .05	98	.77	.82	+ .05	106
35 to 44 years	2.74	3.53	+ .79	129	1.66	1.43	− .23	86
45 to 54 years	3.04	3.23	+ .19	106	3.32	3.75	+ .43	113
55 to 64 years	2.16	2.91	+ .75	135	6.54	8.58	+2.04	131
65 years and over	1.11	2.19	+1.08	197	17.77	16.62	−1.15	94

The recorded industrial insurance mortality statistics of tanners, beamers, and curriers include 478 deaths from all causes, of which 89, or 18.6 per cent, were from consumption. Of the mortality of this group from respiratory diseases other than consumption, 65 deaths were from pneumonia, 9 from bronchitis, 5 from asthma, and 12 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined, it is found that 37.6 per cent of the mortality of tanners, beamers, and curriers was from diseases of the lungs and air passages. The proportionate consumption mortality was excessive at all ages under 55. The excess in the mortality was most pronounced at ages 15 to 24, when out of every 100 deaths from all causes, 51.2 were from consumption, against a normal expected proportion of 27.8. The analysis in detail is set forth in the table following:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG TANNERS, BEAMERS, AND CURRIERS, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for tanners, beamers, and curriers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of tanners, beamers, and curriers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Tanners, beamers, and curriers.	Males in registration area, 1900 to 1906.
15 to 24 years	41	21	51.2	27.8
25 to 34 years	44	19	43.2	31.8
35 to 44 years	66	18	27.3	23.6
45 to 54 years	81	16	19.8	15.0
55 to 64 years	100	7	7.0	8.1
65 years and over	146	8	5.5	2.7
Total	478	89	18.6	14.8

The preceding observations and statistical data regarding curriers, and tanners, beamers, and curriers considered as a group, are more or less conflicting, but the insurance experience data fully confirm the conclusions regarding persons employed in the leather industry as a whole, that the mortality from consumption is excessive at all ages under 55, and that the excess is, in all probability, in part the result of more or less exposure to organic dust.

SADDLE AND HARNESS MAKERS.

In Rhode Island during the period 1852 to 1906 there were 153 deaths recorded of saddle and harness makers. Of this number 39, or 25.5 per cent, were from consumption, and 20, or 13.1 per cent, were from respiratory diseases other than consumption.

Regarding saddlers and harness makers, the report of the registrar-general on the occupation mortality of England and Wales for 1900 to 1902 contains the following:

> At ages 15 to 20 years the death rate of saddlers is below the standard for occupied and retired males, but at all other stages of life the rates differ little from that standard. Within the main working period the comparative mortality figure is 945, or 6 per cent below the standard. The mortality from influenza, cancer, respiratory diseases, and accident is considerably below the average, but that from phthisis and from nervous diseases is slightly above it.(a)

The most recent English mortality statistics for saddle and harness makers do not indicate that this particular branch of the leather industry is unfavorable to the life and health of the employees. In the table which follows, the mortality from all causes among men in this group is compared with that of occupied males generally, and the result is, on the whole, quite favorable to saddle and harness makers.

MORTALITY FROM ALL CAUSES AMONG SADDLE AND HARNESS MAKERS, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for saddle and harness makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	1.81	−0.63	74
20 to 24 years	4.41	4.70	+ .29	107
25 to 34 years	6.01	6.08	+ .07	101
35 to 44 years	10.22	9.77	− .45	96
45 to 54 years	17.73	16.88	− .85	95
55 to 64 years	31.01	29.33	−1.68	95
65 years and over	88.39	90.33	+1.94	102

A more extended comparison is made in the next table, in which the mortality of saddle and harness makers from consumption and from other respiratory diseases is compared with the normal mortality of occupied males from these diseases by divisional periods of life. The comparison shows that the mortality from consumption was somewhat excessive at all ages under 65, the excess being most pronounced at ages 20 to 24. On the other hand, it appears that the mortality of saddle and harness makers from respiratory diseases other than consumption was favorable at all ages when compared with the mortality for all occupied males. If the mortality from the two causes combined is taken, the mortality of saddle and harness

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[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lx.

makers from consumption and from other respiratory diseases compares quite favorably with the mortality for all occupied males from the same diseases.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **SADDLE AND HARNESS MAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for saddle and harness makers.			Death rate per 1,000 for all occupied males.	Death rate for saddle and harness makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years....	0.54	0.63	+0.09	117	0.24	0.18	−0.06	75
20 to 24 years....	1.55	2.84	+1.29	183	.48	.29	− .19	60
25 to 34 years....	2.03	2.58	+ .55	127	.77	.49	− .28	64
35 to 44 years....	2.74	3.49	+ .75	127	1.66	1.19	− .47	72
45 to 54 years....	3.04	3.56	+ .52	117	3.32	2.01	−1.31	61
55 to 64 years....	2.16	2.24	+ .08	104	6.54	5.39	−1.15	82
65 years and over	1.11	.60	− .51	54	17.77	14.45	−3.32	81

For the purpose of making this statistical statement as complete as possible, the following table for Switzerland is added. The table shows the mortality from consumption among saddlers, compared with that for all occupied males in Switzerland. This table indicates that the mortality from consumption among saddlers in Switzerland was in excess of that for all occupied males at all ages except 40 to 49, the excess being greatest at ages 60 to 69, when it equaled 6.76 per 1,000. This unfavorable experience may be due to the different methods of manufacture in Switzerland as compared with England and the United States.

MORTALITY FROM CONSUMPTION AMONG **SADDLERS**, COMPARED WITH ALL OCCUPIED MALES IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[Figures from Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for saddlers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	1.30	2.10	+0.80	162
20 to 29 years	3.04	4.24	+1.20	139
30 to 39 years	3.66	6.77	+3.11	185
40 to 49 years	3.65	3.61	− .04	99
50 to 59 years	3.52	6.83	+3.31	194
60 to 69 years	3.25	10.01	+6.76	308
70 years and over	1.84	4.33	+2.49	235

The recorded industrial insurance mortality statistics include 510 deaths of harness makers and saddlers from all causes, of which 89, or 17.5 per cent, were from consumption. Of the mortality of harness makers and saddlers from respiratory diseases other than consumption, 41 deaths were from pneumonia, 9 from bronchitis, 4 from asthma, and 7 from less frequent respiratory diseases. If the deaths from consumption and from other respiratory diseases are combined it is found that 29.4 per cent of the mortality of harness makers and saddlers was from diseases of the lungs and air passages. The excess in the consumption mortality is brought out clearly in the tabular presentation of the proportionate mortality from this disease by divisional periods of life. The proportionate consumption mortality was excessive at all ages under 65, but the excess was most pronounced at ages 25 to 34, when out of every 100 deaths from all causes 47.7 were from consumption, against a normal proportionate mortality of 31.3. The analysis of the consumption mortality of harness makers and saddlers is set forth in detail in the table following:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **HARNESS MAKERS AND SADDLERS**, 1897 TO 1906, COMPARED WITH THAT FOR ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for harness makers and saddlers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of harness makers and saddlers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Harness makers and saddlers.	Males in registration area, 1900 to 1906.
15 to 24 years	34	15	44.1	27.8
25 to 34 years	44	21	47.7	31.3
35 to 44 years	60	20	33.3	28.6
45 to 54 years	86	20	23.3	15.0
55 to 64 years	131	11	8.4	8.1
65 years and over	155	2	1.3	2.7
Total	510	89	17.5	14.8

The preceding observations and statistical data indicate that in certain branches of the leather industry the inhalation of dust undoubtedly tends to shorten the lives of the employees and to cause a somewhat excessive mortality from consumption and from other respiratory diseases. These unfavorable conditions, however, appear to be more frequently met with in the working of finished leather than in the tanning processes. Taking the leather industry as a whole, the unfavorable effects of dust inhalation are less pronounced than in most other dusty trades.

GLOVE MAKING.

The glove industry in 1900 gave employment to 14,436 wage-earners, of which 9,754 were women. During the preceding decade the number of wage-earners increased 76.3 per cent, but the number of women wage-earners considered separately increased 91.6 per cent. These are the census returns for 1900, which, however, are limited to gloves and mittens made of leather, but the number employed in the manufacture of gloves and mittens of other materials is not accurately known. The process of manufacture has been described in the census report on manufactures in part as follows:

> As soon as the skin is received by the glove maker it is immediately staked by the hand stake, which consists of two upright and two horizontal bars, one of the latter being movable to admit the skin, which is held in position by a wedge inserted at the end of the bar. The stretching is then done by pressing over the skin so placed a blunt iron, like a spade, having round corners and a handle which fits under the arm. The oil-dressed skins are then split even in a belt-splitting machine, and the kid skins are shaved either by "mooning" or by placing them on a marble slab with the flesh side up, and shaving the surface with a broad chisel or so-called "dowling" knife. By this process the skin is reduced to the desired thinness, and the inequalities of the flesh side are removed. "Mooning" is done with a round steel shaped like a plate and having the center cut out and a handle placed across the opening; the skin is then hung on an elastic pole and the moon-shaped knife is drawn over the flesh until the desired result is secured. The skin is then ready to go to the cutters, of which there are two classes, the block and the table cutter, each class, as a rule, having separate rooms. The block cutters, most of whom are of American parentage, are engaged in cutting the cheaper and coarser grade of gloves.
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> The skin is placed on a block made of hard-wood planks placed on end and bolted together, and the die of the required shape and style is placed carefully on the skin and given a blow with the maul. In the table-cutter's room tables instead of blocks are used. The skin is dampened, then stretched over the end of the table until it will stretch no more, and then cut off the length of the glove; next stretched to width and cut off, after which the fingers and opening are put in with the die and press.
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> From the cutters' room the leather, which has assumed the shape of the glove, is sent to the "silkers," who embroider the back, and then to the "makers." Some make the gloves—that is, they sew the fingers and put the thumbs in; others, called "welters," are engaged in welting or hemming the glove around the edge at the wrist; still others, called "pointers," work the ornamental lines on the back.
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> After the glove has reached this stage of completion, the fourchettes and the thumb are put in place; the back is then embroidered and the end of the silk is pulled out and tied, and the glove closed by beginning either at the upper end of the long seam and sewing

toward the little finger, or at the end of the index finger and finishing with the long seam. The glove is now ready to be bound, hemmed, or banded, the buttonhole made, or the lacings or fastener adjusted. After the gloves are made they are drawn over metal hands heated by steam, a "laying-off" process, as it is termed, and by means of which the glove is shaped and given its finished appearance. The gloves are now ready for inspection, and are assorted according to grades and sizes, and finally forwarded to the stock room, ready for shipment.([a])

The foregoing descriptive account of the usual method of manufacture does not indicate any particularly unfavorable conditions detrimental to health. As far back, however, as 1860, the sanitary aspects of the employment attracted attention, and in the Third Report of the Medical Officer of the Privy Council, published in 1861, extended consideration was given to the manufacture of gloves in the registration district of Yeovil, England, where at that time nearly one-third of the women were engaged in glove manufacture, then regarded as the staple business of the district. The manufacture of gloves was at that time almost entirely a domestic industry, although there were some factories where the materials were cut out and partly made up. Approximately 50,000 persons were employed in this branch of domestic manufacture, and the industry attracted the attention of the sanitary authorities on account of the high general death rate from pulmonary diseases. While the women were chiefly employed at home, the men engaged in the glove trade were for the most part at work in the factories, where a few children and young women were employed at the time. Boys were employed as early as 7 years of age; and the hours were from 6 a. m. to 8 p. m., with a reasonable time for meals. The workrooms in some of the factories were low and the ventilation was very imperfect. In commenting upon the health of the working people the report states that—

> Except from working in ill-ventilated rooms for so many hours a day, there is no ostensible reason why persons employed in the glove factories should suffer in an unusual degree from pulmonary diseases. Drinking is said to be a common vice among the men, many of whom pass the first two days of the week in dissipation, and work very hard during the remainder, to recover lost time. On this account men sometimes work as long as seventeen or eighteen hours out of the twenty-four toward the end of the week. It was asserted that, though still dissipated and improvident, the character of the men has much improved during the last twenty years.([b]) .

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 797.

[b] Third Report of the Medical Officer of the Privy Council, 1861, pp. 189, 190.

After an extended account of the decidedly unfavorable conditions of work affecting women and children employed in the industry, the report concludes with the statement that—

> As far as could be ascertained, the great prevalence of pulmonary diseases among the population of Yeovil, as shown by the excess of mortality above the normal rate, is caused mainly by the sedentary habits of the people; by the small, imperfectly ventilated, and often overcrowded cottages in which they dwell; and, in the case of the men, and of a small proportion of females and children, by the close ill-ventilated factory rooms in which they work.([a])

In a subsequent report of the medical officer of the Privy Council for the year 1863, published in 1864, the sanitary aspects of the glove industry were again considered at some length, chiefly, however, with reference to the employment of kid-glove stitchers. It is pointed out in the report that in this employment "The position of the body is that of sitting and leaning forward; and as close attention is required, and much work has to be performed by a most inefficient artificial light, the stitcher stoops, and places her eyes very near to her work. Hence contraction of the chest, displacement of the lungs backward, deficient respiration, and impaired eyesight commonly follow." To these evils are added those of long hours, low wages, and the employment of children between the ages of 9 and 14 years. "The general state of health was not good, the women and children were commonly pale, and had thin, sensitive skins, and when they were not emaciated they were weak." The inquiry into the employment included a careful consideration of the food, and the final conclusions were summed up in the statement that: (1) The occupation was an unrequited and unhealthful one, certain to produce unfavorable results upon the body, mind, and morals of female children and upon the women generally; (2) that the working people were ill fed and unhealthy; and (3) that the money expended upon food did not obtain the amount of nourishment which it might obtain.([b])

In the same report there is an account of the sanitary aspects of stocking and glove weavers, which, however, for practical purposes, may be considered as a branch of the knitting and hosiery industry. The conclusions of the inquiry with respect to this class of labor were somewhat more favorable, but they also appear to warrant the opinion that the state of health was below the normal, chiefly, however, because of low wages and poor housing accommodations.

Glove making is considered at some length by Arlidge, who observes that the industry has no serious incidental health factors, and that it is not, in so far as the majority of male workers are concerned, in a strict sense a sedentary occupation, for several kinds of work call for active movements of both the arms and trunk and a standing position; but in the case of women, he remarks, and chiefly in the finishing branches, the sitting posture is the rule. He remarks further that—

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[a] Third Report of the Medical Officer of the Privy Council, 1861, pp. 189, 190.

[b] Sixth Report of the Medical Officer of the Privy Council, 1864, pp. 225–227.

> The skins used by glovers are received from the skin-dressers in a dry parchment-like condition, and besprinkled with a fair amount of dust. In sorting the skins before delivery to the glove makers, considerable dust, of an irritating character, is thrown off. By a succeeding operation, called "frizzing," effected by drawing and stretching the skin over a steel edge, the stiffness is removed. This done, the next process is to reduce the thickness by a kind of shaving process, and to trim its rough and irregular edges. To reduce thickness the skin is stretched on a marble or metal slab, and being dusted with flour, is shaved on its under or flesh side by a broad chisel-like implement. While thus engaged, the workman frequently blows away the soft fibrous trimmings with his mouth, and from time to time resprinkles the surface with flour. Large coarser skins are stretched on a sort of wooden shield, "the beam," and worked with a two-handled tool, which the workman draws toward him. This proceeding creates a risk of severe wounds above the knee, should the leather tear. The operation is called "doling," and is admitted by the men engaged in it to be unhealthy; causing tightness and weight at the sternum, and after some years' employment, chronic bronchitis and asthma.([a])

The most recent authority on the sanitary aspects of the industry is a small treatise in German entitled Health Book of Glove Manufacture, by Dr. Alfred Mode, published in 1899. The hygienic aspects of glove manufacture and resulting diseases are considered in detail, but confirming more or less the observations and conclusions of earlier authorities. Doctor Mode calls attention to the comparatively high degree of consumption frequency in the industry, but he in part attributes this to the fact that the labor being light persons predisposed to the disease are attracted to the employment. He remarks that dust is generated in quite large quantities in some of the processes, but not in all, and that there is unquestionably a direct relation between dust and disease in the glove-making industry. But conceding this to be the case, he concludes that it is very difficult indeed to state with accuracy how far each of the various factors detrimental to health is chiefly responsible for the disease, for aside from dust it is necessary to consider the unfavorable bodily position assumed in some of the occupations, the effect of polluted atmosphere, high temperature in some of the rooms, and a generally irrational mode of life. Tuberculosis, he states, is met with in all its various forms among glove makers, chiefly, of course, as consumption of the lungs. Bronchitis, pneumonia, and influenza are also stated to be of more than normal frequency, but how far the occurrence of these diseases is favored by insanitary habits on the one hand and alcoholism on the other it is difficult to say. Among the women employed anæmia and chlorosis, as well as consumption, are exceedingly common. Doctor Mode quotes the statistics of the Communal Insurance Institution for Glove Makers, including 500 members, among whom there occurred 127 cases of sickness, of which about 25 per cent were diseases of the lungs and air passages. While the statistical material considered is too limited for definite conclusions, it confirms the opinion based upon general considerations that the dust factor in glove making accounts in part at least for a comparatively high mortality from consumption in this employment.

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[a] Diseases of Occupations, by J. T. Arlidge, p. 211.

BOOT AND SHOE MAKERS.

The number of persons in the United States employed in boot and shoe making, including repairing, as shown by the report of the census of 1900 on occupations, was 209,047, including 39,510 women. Of the total, 106,819 were boot and shoe factory operatives, 101,643 were shoemakers not in factories, while 585 were apprentices. Of the factory operatives 37,478, or 35.1 per cent, were women.(a) The tendency in the industry is steadily toward the elimination of the handmade product, and the shoemakers who are not factory operatives are practically all engaged in repair work. The modern methods of boot and shoe manufacture are extremely intricate industrial processes and practically every operation is more or less mechanical. Most of the processes of manufacture as such have, apparently, no immediate relation to the health of the operative, and a descriptive account of the industry is therefore unnecessary. The newer shoe factories are large establishments, well ventilated, and properly provided with light and sanitary accommodations. On account of the far-reaching changes in the industry from hand work to machinery, the earlier observations upon the health and mortality of boot and shoe makers apply only in part to the trade at the present time and almost exclusively to the men engaged in repair work. Thackrah observes that shoemakers, on account of their employment, are required to assume a very unfavorable position, as the result of which the abdominal viscera, and especially the stomach and liver, are compressed. He holds further that "digestion and circulation are so much impaired, that the countenance would mark a shoemaker almost as well as a tailor." The same writer had ascertained that the capacity of the lungs in the case of shoemakers is found to average 182 cubic inches, and the circumference of the chest 35 inches. In the case of the few shoemakers observed who lived to old age, it was

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[a] Report on Occupations, Twelfth Census of the United States, 1900, p. 8.

found that there was often "a remarkable hollow at the base of the breastbone, occasioned by the pressure of the last." While the position and other conditions of the employment of the shoemaker were, no doubt, injurious to health, bad habits, in the opinion of Thackrah, were much more responsible for the high mortality observed at the time.([a])

Writers on industrial diseases subsequent to Thackrah comment upon the favorable influence of the introduction of machinery into the trade, not only removing certain health-injurious consequences of shoemaking by hand, but also resulting in the building of larger and better lighted and ventilated workshops. Doctor Arlidge was one of the first of English authorities on occupation diseases to give extended consideration to the hygiene of the employment under more modern conditions. From this writer is quoted the following statement:

> In the circumstances prevailing less than half a century ago, there was much to write about respecting the business of boot and shoe makers in its relation to health. The greater portion of the work was then done by the solitary shoemaker, or by a few collected in a small shop; and the whole operation was a simple handicraft. At the present time the old-fashioned craftsman is rapidly disappearing under the influence of factories, often of large dimensions, fitted with machinery which requires little else than the guiding hand, and turns out boots and shoes in as few minutes as the best workmen in olden time took hours to accomplish.
>
> In the olden time the shoemaker sat with his last held firmly between his thighs and knees, and to "close" used a simple instrument, the clamp, to keep approximated the edges to be sewed together. He sat on a low stool, with the trunk bent forward considerably, the last pressing against his breast-bone and stomach. With his awl he drilled holes to pass his waxed thread through, using his arms forcibly to fasten each stitch. To fix the sole on the uppers the drilling and stitching demanded vigorous pulling by an outward movement of the arms from the chest, not unfavorable to chest expansion. But the advantages of this expansive movement were negatived by the pressure of the last against the chest, which, when practiced from early years, caused a marked depression of the breast-bone and cartilaginous ends of the ribs, in outline like the hollow of a spoon. This pressure was, at the same time, detrimental to the stomach, and a cause of dyspepsia. The long sitting had as its sequel obstinate constipation, doubtless aggravated by neglect of the workmen.
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> In the modern style of bootmaking the uppers are riveted to the soles, instead of being stitched. Where "making" is done at home by hand, the chest suffers from pressure against it of the heel of the boot, fixed on an iron last, in the operation of burnishing and filing off the rough ends. Those who cut out and shape the leather to be

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[a] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 30.

> made up are called "clickers;" and these pursue their work standing in a stooping attitude, and to some extent press the stomach against the workbench. For the finishing operation upright lasts have been introduced, at which the men can stand; but many prefer, as of old, sitting, with more or less pressure of the last against the thorax.[a]

Referring to the earlier observations by Thackrah, Doctor Arlidge remarks that the health-injurious circumstances of the employment, as then observed, were probably more the result of insanitary shops, dirt, and irregular living than because of any peculiarities of trade processes. Nevertheless, he remarks, however, "even at the present period, the bulk of shoemakers have a meager, unhealthy look (though working in capacious factories and rescued by machinery from what were unhealthy mechanical operations), due, principally, to the fact that many of them still pursue the evil example of their forefathers, in addiction to strong drinks, besides many irregularities damaging to health."

With special reference to phthisis, Arlidge refers to the recorded mortality of shoemakers in Copenhagen, where, according to Hannover, it had been calculated that one-third who followed the trade died from this disease. Referring to Doctor Ogle's more recent English data, it appeared that out of 1,635 deaths of shoemakers from all causes 451, or 27.6 per cent, were from phthisis, certainly, in the opinion of Arlidge, "an excessively high ratio." The remarks by Arlidge conclude with the following statement:

> The vital statistics of shoemakers, as above quoted, apply, to a great extent, to past years, when the old trade operations were in vogue. It will be interesting to learn what changes for the better the adoption of machines and the extension of the factory system to the trade have wrought in the health history of shoemakers. The new system has evidently numerous advantages, but these may, in some degree perhaps, be lessened by the circumstances of associated labor, and of heated and overlighted workrooms, particularly where hot pipes exist, and a superabundant supply of gas is consumed.[b]

Among the more recent authorities on the health-injurious circumstances of boot and shoe making reference may be made to Doctor Oliver's article in his treatise on Dangerous Trades, in which there is included an illustration of one of Doctor Oliver's own patients in the Newcastle Infirmary, exhibiting a case of shoemaker's chest, showing the great recession of the lower part of the chest, due to the pressure of the last. In describing the conditions which led to this deformity, which has an important bearing upon the degree of consumption frequency among men in this trade, Oliver, after expressing the opinion that in course of time this affliction would probably cease to exist, remarks that—

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[a] Diseases of Occupations, by J. T. Arlidge, pp. 215, 216.

[b] Idem, p. 217.

> At his work the old type of shoemaker would sit on a low bench, with his thighs and knees tightly drawn towards each other, clasping the last with the boot upon it. His trunk would be bent down over his work, so that during the act of stitching and drawing the waxen threads through the holes made by his awl in the leather, his arms would be forcibly separated from his sides in order to tighten each stitch, while any beneficial expansion of the chest that this movement created was unfavorably counterbalanced by the increased pressure of the last upon his chest bone. As a consequence of this repeated pressure applied to the front of the chest, especially on younger men, the chest bone and ribs were driven in so as to form a deep hollow.([a])

The same authority on occupation diseases observes, with respect to present-day conditions affecting health and life in the boot and shoe industry, that—

> Shoemakers formerly suffered from bronchitis and pulmonary phthisis in fairly large numbers, but much of this was due to the sedentary character of their occupation, their want of exercise in the open air, and their intemperate habits. The introduction of machinery, and the bringing of shoemaking under the factory acts, may to some extent effect an improvement in the health of shoemakers, but in many of the factories which I have visited, and where large numbers of persons are employed, the overheated rooms in which the work is carried on and the vitiated atmosphere rather predispose the workpeople to pulmonary catarrh, and tend to make the women anæmic. In addition, mercurial poisoning has been known to occur in the men employed in shoemaking factories, whose duty it is to mind the American or Blake machines. The mercury is placed in a well in the machine, to act as a lubricant, and as the metal is extremely volatile, poisoning may readily arise.([a])

The liability of boot and shoe makers to industrial phthisis was inquired into by the British departmental committee on compensation for industrial diseases. Dr. J. Beatty, medical officer of health of Northampton gave evidence to the effect that the mortality from phthisis among boot and shoe makers was excessive, but he was not of the opinion that the form of the disease was of the fibroid type, but, to the contrary, held that the disease, as generally met with among men in this employment, was tubercular phthisis in its usual form. He said that the death rate of shoemakers, undoubtedly, was above the average and that it was higher among male operatives than among female operatives. According to his calculations, the phthisis death rate for boot and shoe makers was 2.59 per 1,000, against a normal average of 2.08 for the whole population. Referring to the finishing process as an exceptionally dusty one, and one in which the conditions predisposing to consumption were, apparently, most in evidence, he stated that—

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[a] Dangerous Trades, by Thomas Oliver, p. 824.

> In the finishing process they put the sole of the boot over an emery or glasspaper wheel, and rub off a great deal of dust from it, with, of course, a certain amount of brass filings from the rivets. In that case, of course, there is a good deal of dust produced, which is taken away by fans; but nevertheless a certain amount gets into the throats of the workmen. If I found that in a factory concerned the dust was not properly taken off and the men developed phthisis, and I could not find any other cause for it, I should be disposed to say that in that case probably the disease had originated from the man's employment, or that his lungs had been so weakened that he was rendered liable to it.(a)

Aside from exceptional circumstances in the case of particular branches of the industry, on the whole the conclusions of Doctor Beatty conform to the opinion of Doctor Tatham, based upon the observed mortality of shoemakers generally, and expressed in the statement that—

> Although the contrary is generally held to be the fact, shoemakers are shown, by the figures now at our disposal, to enjoy a degree of health which is at least equal to that of the average workingman.(a)

What in England is called "clicking," that is, the cutting of the leather to a pattern, is generally considered to be more unhealthy than most of the other branches in the boot and shoe industry. Doctor Beatty, in his evidence as to why men in this employment were exceptionally liable to lung diseases, said that clickers in their work had to stoop a great deal, which, of course, would tend to act on the chest and diminish its capacity, but clicking was also supposed to attract the physically weak, who were unfit for branches of the trade requiring a healthier and more robust type.

Much additional evidence was submitted to the committee on compensation for industrial diseases, but no conclusive evidence was produced to prove either an excessive death rate or particularly unhealthy conditions predisposing to a high mortality from consumption. More definite and conclusive are the results of an investigation made by the Massachusetts state board of health, published in 1905 and in 1907. In the first report, which was published in the Thirty-sixth Annual Report of the State Board of Health of Massachusetts, it is stated that some thirty different boot and shoe making establishments had been investigated and that nearly all of them had been found to be provided, to some extent, with blower or exhaust fans, for mechanical ventilation, but that in many instances the apparatus was inadequate for the needs of the establishment. In certain processes connected with the manufacture of shoes, it was found that considerable dust was produced, and as a result, it was held, the industry should be classed among the dusty trades. Reference is made to the mortality returns of Lynn and Brockton, which are the two most important centers of the boot and shoe industry in Massachusetts. In the city of Brockton out of 167 deaths occurring among shoemakers, 42, or 25.1 per cent of the whole, were found to be due to pulmonary consumption, and of this number the proportion of those dying below the age of 30 was 36 per cent. The number of deaths from all lung diseases, including consumption, was 61, or 36.5 per cent of the mortality from all causes. In Lynn during a period of three years there occurred 297 deaths among shoemakers, 65, or 21.9 per cent, of which were due to consumption. Including deaths from other respiratory diseases, the total mortality from diseases of the lungs and air passages was 95, or 32.0 per cent of the mortality from all causes. More than one-half, or 55.4 per cent, of those who died from consumption had not yet attained their thirtieth year. The report concludes with the statement that—

(a) Report of the Departmental Committee on Compensation for Industrial Diseases, Minutes of Evidence, p. 277. London, 1907.

> There was one condition which was very noticeable in a large proportion of the shoe factories visited, but by no means peculiar to this line of industry, and that was the habit of indiscriminate spitting. In some instances spittoons were provided, and these appeared to diminish the habit of spitting carelessly upon the floors; in some, spitting is forbidden; in others, it is not forbidden and spittoons are not supplied. In some of the larger establishments everything that can be provided for the health, comfort, and happiness of the employees may be found; but in others there is room for very marked improvement.(a)

The report published in 1907 considers the industry at greater length, including an examination of the conditions observed by personal inspection in 373 establishments. Of these 62 were found to be with good conditions regarding the health and welfare of the working people, 91 with unsatisfactory conditions, 72 with poor conditions, 19 with distinctly bad conditions, and 129 were unclassified. The report points out that four conditions had been observed to prevail, all of which were subject to ventilation changes, being, first, poor ventilation; second, inadequate removal of dust from machines; third, the condition of toilet rooms; and fourth, spitting upon the floors. In the majority of the factories visited the ventilation was found to be poor, and in many of them distinctly bad. In the rooms in which large amounts of dust were evolved, the number of machines with means for efficient, or fairly efficient, removal of dust, was found to be 1,630, while the number either inefficiently equipped, or void of equipment, was 2,769. Of 84 of the many dusty rooms reported, 40 were

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[a] Thirty-sixth Annual Report of the State Board of Health of Massachusetts, for the year ending September 30, 1904, pp. xxvi, xxvii.

also overcrowded, 35 were dark, 21 were overheated, and 18 were overcrowded, dark, and overheated. In the opinion of the inspectors of the state board of health, the health of the employees in the industry in the larger number of establishments appeared to be from fair to good, but in 85 factories, or 23 per cent of those visited, a considerable proportion of the employees were noticeably pale and unhealthy.

With respect to ventilation it is stated that—

> In the majority of the factories visited the ventilation was found to be poor, or distinctly bad; and in most cases where these conditions obtained, there was excessive heat. Where the ventilation is poor, the air becomes much worse toward night; and in some cases it is so bad that the employees assert that they are sometimes nauseated on entering the workrooms in the morning. These are usually long and narrow; and if, in cold weather, the windows are opened, cross-drafts are established. Some foremen say that, while they would be blamed were employees to complain that they had taken cold from open windows, they are not blamed by employees for sickness due to vitiated air and overheating. Crowding of rooms with machinery and stock facilitates work by shortening the distances through which the shoes have to travel in the processes of manufacture; and it is asserted that more cubic space per capita would involve a considerable addition to the general expense of maintenance.
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> In 103 factories strong odors of naphtha were observed. In some establishments it was said that the odors were so overpowering that the girls who handle the naphtha cement become nauseated, and suffer from headache. Some of the naphtha cements cause much more trouble than others. In 24 factories fumes of wood alcohol were plainly observable.
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> In a certain number of rooms strong odors of naphtha were noticed, in addition to wood alcohol fumes. In 74 of the many unventilated rooms, some of which were overcrowded and overheated, the employees were exposed to strong fumes of naphtha or of wood alcohol, or of both. As stated elsewhere in this report, wood alcohol fumes are a real danger to health, and especially to sight, not infrequently causing total blindness; but no instances of trouble arising therefrom were reported in the investigation of this industry.(a)

Regarding the removal of dust, the report states, in part, as follows:

> The rooms in which large amounts of dust are evolved are those in which the operations of heel trimming, edge trimming, buffing, naumkeaging, heel scouring, breast scouring, polishing and upper cleaning are conducted. For effective removal of this dust, exhaust flues attached to the machinery are necessary. Of the 373 factories visited, 126 are partially, and a fair proportion of these are wholly, equipped with this means of protection to the workmen; in 88 of these 126 one or more machines are not so equipped; and in 49 of the 88 there are rooms in which the air, apart from the escaping dust,

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[a] Report of the Massachusetts State Board of Health upon the Sanitary Condition of Factories, Workshops, etc., 1907, p. 58.

is noticeably bad. The number of machines with means for efficient or fairly efficient removal of dust was found to be 1,630; the number either inefficiently equipped or devoid of equipment was reported as 2,769.

The reasons for inefficiency include improper adjustment of hoods, clogging of pipes, leaking pipes, bad connections, poor draft, small openings, small pipes, improper position of machines with reference to light, necessitating the raising of hoods in order to see well. It appears, however, that a machine may be fairly effective in dust removal with one kind of work, and faulty with another; and that, while with some kinds of material a well-equipped machine may give off some dust, with other material a machine without exhaust drafts may create little, if any. Again, in edge trimming much less dust is produced when light and thin-soled shoes are made; and, further, it not infrequently happens that, owing to changes in styles of shoes, it becomes necessary to introduce machines into places where such were not originally intended to go, or processes are modified so that machines which worked unobjectionably before give off much dust when employed on a different kind of material. Thus it happens that in certain factories, in which there is an evident intention to have all conditions perfect, a set of machines may be found whose running is attended by objectionable conditions. It is only fair to state that in one city (Marlborough) nearly all of the factories have unusually good dust-removing machinery, and that the results are generally most commendable. Of 84 of the many unventilated and dusty rooms reported in the course of this investigation, 40 were overcrowded, 35 were dark, 21 were overheated; and 18 were overcrowded, dark and overheated.([a])

The report includes extracts from the reports upon individual establishments, from which, for purposes of illustration, the following quotations are made:

About one-tenth of the employees seem to be in poor health. Several weak-looking boys exposed to strong odors of wood alcohol. Room with 60 occupants, crowded with stock, air bad, and strong odor of naphtha in various parts. Room with 75 occupants, overcrowded, overheated, unventilated. Room with 50 occupants, crowded with stock and machinery, air foul and dusty.

Room with 50 occupants, several under 18 years of age, very hot and air very foul. Much spitting on the floor. Some of the machines give off a great deal of fine dust. More than half of the cubic space in this room is taken up by stock and machinery.

Room with 120 occupants, exposed to much fine dust; 20 men exposed to strong fumes of naphtha and wood alcohol. Some of them are noticeably pale, but all of them have become accustomed to the smell. Another room, with 120 occupants, overheated and not ventilated. Much spitting on the floor. Some of the women and about one-half of the minors of both sexes look pale and poorly nourished.

Rooms occupied by from 40 to 160 persons, are overcrowded and not ventilated. In some the odor of naphtha is strong; in some the dust is excessive. In one, with 40 occupants, a cloud of fine dust flies from 11 scouring machines and settles upon the walls and wherever it can reach, and men complain of great discomfort therefrom. Half of the men look unhealthy. From 9 rotary brushes a great deal of fine black dust and lint is thrown, and it settles everywhere, including the faces and especially about the nostrils of the workmen. All of the men in this room, and 3 boys aged about 16, appear to be in especially poor health.([a])

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[a] Report of the Massachusetts State Board of Health upon the Sanitary Condition of Factories, Workshops, etc., 1907, p. 59.

The census mortality statistics of boot and shoe makers by divisional periods of life are compared in the following table with the similar data for the manufacturing and mechanical and the mercantile and trading classes.

MORTALITY FROM ALL CAUSES AMONG BOOT AND SHOE MAKERS, COMPARED WITH THAT OF THE MANUFACTURING AND MECHANICAL CLASS AND THE MERCANTILE AND TRADING CLASS, IN THE REGISTRATION STATES, 1900, BY AGE GROUPS.

[From report on Vital Statistics, Twelfth Census of the United States, 1900.]

Age at death.	Death rate per 1,000 among—		
	Boot and shoe makers.	The manufacturing and mechanical class.	The mercantile and trading class.
15 to 24 years	2.74	4.43	2.60
25 to 44 years	3.39	8.85	6.72
45 to 64 years	11.18	20.16	19.91
65 years and over	77.87	105.43	93.79

According to this table the general death rate of boot and shoe makers compares favorably with the other classes at all of the specified ages.

Opposed to this favorable general death rate there is other statistical evidence that boot and shoe makers are subject to a comparatively high mortality from consumption. In Rhode Island, during the period 1852 to 1906, there were 716 deaths reported of shoemakers, 138, or 19.3 per cent, of which were from consumption, and 64, or 8.9 per cent, from other respiratory diseases.

Regarding shoemakers, the report of the registrar-general on the occupation mortality of England and Wales for 1900 to 1902 contains the following decidedly suggestive observations based upon the observed mortality of 197,555 shoemakers above the age of 15 years:

> It appears that up to the age of 35 years, and again at ages above 65 the mortality of shoemakers slightly exceeds the standard for all occupied and retired males, while at other ages it is slightly below that standard. Within the main working period of life the compara-

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[a] Report of the Massachusetts State Board of Health upon the Sanitary Condition of Factories, Workshops, etc., 1907, pp. 61–63.

tive mortality figure is 984, or within 2 per cent of the average; the mortality from phthisis, however, is in excess by 45 per cent, but that from influenza and respiratory diseases, as well as from alcoholism and liver disease, and Bright's disease, is considerably below the standard, and the mortality from accident is little more than one-third of the average.([a])

The most recent English mortality statistics are also suggestive of health-injurious conditions in this trade. In the table which follows the mortality from all causes among men in this employment is compared with that of occupied males generally. The general death rate is somewhat excessive at ages under 35, but is favorable at ages 35 and over.

MORTALITY FROM ALL CAUSES AMONG **BOOT AND SHOE MAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for boot and shoe makers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	2.44	2.65	+0.21	109
20 to 24 years	4.41	5.14	+ .73	117
25 to 34 years	6.01	6.33	+ .32	105
35 to 44 years	10.22	9.82	− .40	96
45 to 54 years	17.73	17.37	− .36	98
55 to 64 years	31.01	29.14	−1.87	94
65 years and over	88.39	83.13	−5.26	94

A more extended comparison is made in the next table in which the mortality of boot and shoe makers from consumption and other respiratory diseases is compared with the normal mortality of occupied males from these diseases, by divisional periods of life. The comparison shows that at all ages the mortality of boot and shoe makers from consumption is excessive by from 0.41 to 1.50 per 1,000. The excess was most marked at ages 35 to 44, but it was considerable at ages 20 to 54. The corresponding mortality from other respiratory diseases among boot and shoe makers was slightly favorable at all ages by from 0.02 to 1.00 per 1,000. The slightly favorable mortality from other respiratory diseases does not, however, balance the excess mortality from consumption.

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[a] Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, p. lxiii.

MORTALITY FROM CONSUMPTION AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG **SHOEMAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Mortality from consumption.				Mortality from other diseases of the respiratory system.			
	Death rate per 1,000 for all occupied males.	Death rate for shoemakers.			Death rate per 1,000 for all occupied males.	Death rate for shoemakers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.		Rate per 1,000	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years....	0.54	1.01	+0.47	187	0.24	0.14	−0.10	58
20 to 24 years....	1.55	2.90	+1.35	187	.48	.46	− .02	96
25 to 34 years....	2.03	3.18	+1.15	157	.77	.56	− .21	73
35 to 44 years....	2.74	4.24	+1.50	155	1.66	1.30	− .36	78
45 to 54 years....	3.04	4.18	+1.14	138	3.32	2.80	− .52	84
55 to 64 years....	2.16	2.57	+ .41	119	6.54	5.54	−1.00	85
65 years and over	1.11	1.59	+ .48	143	17.77	17.34	− .43	98

In the Switzerland statistics the consumption death rates of shoemakers were excessive at all ages, thus confirming in a convincing way the English data. The following table gives the data for Switzerland in detail by divisional periods of life:

MORTALITY FROM CONSUMPTION AMONG **SHOEMAKERS**, COMPARED WITH THAT OF ALL OCCUPIED MALES IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[Figures from Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Age at death.	Death rate per 1,000 for all occupied males.	Death rate for shoemakers.		
		Rate per 1,000.	Greater (+) or less (−) than rate for all occupied males.	Ratio to rate for all occupied males.
15 to 19 years	1.30	1.41	+0.11	108
20 to 29 years	3.04	3.52	+ .48	116
30 to 39 years	3.66	3.95	+ .29	108
40 to 49 years	3.65	4.10	+ .45	112
50 to 59 years	3.52	5.35	+1.83	152
60 to 69 years	3.25	5.19	+1.94	160
70 years and over	1.84	4.22	+2.38	229

The recorded industrial insurance mortality statistics of boot and shoe makers include 1,930 deaths from all causes, of which 371, or 19.2 per cent, were from consumption. Of the mortality of boot and shoe makers from other respiratory diseases 173 were from pneumonia, 41 from bronchitis, 30 from asthma, and 34 from other less frequent respiratory diseases. Combining the deaths from consumption and from other respiratory diseases, it is found that 33.6 per cent of the total mortality of boot and shoe makers was from diseases of the lungs and air passages. While the consumption mortality of boot and shoe makers was excessive at all ages, the excess was most pronounced at 25 to 34, when out of every 100 deaths from all causes 50.3 were from consumption, against a normal expected proportion of 31.3. The analysis of the consumption mortality of boot and shoe makers is set forth in detail in the following table:

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **BOOT AND SHOE MAKERS**, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for boot and shoe makers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of boot and shoe makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Boot and shoe makers.	Males in registration area, 1900 to 1906.
15 to 24 years	189	58	41.7	27.8
25 to 34 years	185	93	50.3	31.3
35 to 44 years	179	69	38.5	23.6
45 to 54 years	252	61	24.2	15.0
55 to 64 years	467	54	11.6	8.1
65 years and over	708	36	5.1	2.7
Total	1,930	371	19.2	14.8

The preceding observations and statistical data, derived from both American and foreign sources, clearly indicate that boot and shoe makers are subject to an excessive mortality from consumption and from other respiratory diseases. The excess in the mortality from consumption is, without doubt, in part at least, the result of continuous and considerable exposure to organic dust.

CORK CUTTING AND GRINDING.(a)

The cork industry in the United States is of very limited extent, employing in 1900 only 2,340 wage-earners in 62 establishments. Of the total number employed 1,013 were adult males, 1,144 adult females, and 183 children under 16 years of age. There has been some progress in the industry since 1890, when the number of wage-earners was returned by the census as 2,019, but from a commercial point of view the growth of the industry has been much more rapid, as indicated by the increase in the value of the manufactured product from $2,840,359 to $4,392,364 during the decade ending with 1900.

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[a] For an interesting account of the manufacture of cork, with special reference to the use of machinery, reference may be had to an illustrated article on the subject in Popular Science Monthly for September, 1887.

The industry is concentrated in a few States, chiefly New York with 24 establishments, Pennsylvania with 10, and New Jersey with 8.

The cork industry has undergone material modification within recent years, chiefly resulting from the introduction of cork cutting and sorting machinery, but the use of machinery is limited on account of the variable character of the material. As brought out in the report of the Commissioner of Labor on hand and machine labor, published in 1899, the work under modern methods is being done in from one-third to one-half the time required under the more primitive methods. The industry has never attained to very considerable proportions in this country, being chiefly centered in Spain, Portugal, and Germany. Cork cutting was introduced into northern Germany near the close of the eighteenth century, and it has continued to remain one of the leading industrial pursuits in the flat lands at Hasbergen and Delmenhorst in the vicinity of Bremen. In a descriptive account published in Die Gartenlaube for 1888 (No. 39) it is stated that the two main divisions of labor are cutting and sorting, both of which, according to the description, are evidently accompanied by the production of considerable quantities of dust. Cork cutting by hand is a comparatively simple process, which is even more simplified when machines are used either for cutting or boring purposes. In northern Germany, where the cutting of cork is still to a considerable extent a domestic industry, the cork bark being delivered in quantities to the homes of the workmen and the finished product being returned to the factory for sorting and other purposes, the conditions are quite different from those common in the United States. In this country most of the cork is cut as well as sorted and otherwise manipulated in the factory, which, at least, differs in one essential from cork cutting as a domestic industry, and that is that the employment of small children is practically eliminated. In northern Germany practically the entire family helps more or less to increase the product and the scant earnings of the family, with the exposure on the part of even the very young to the not inconsiderable quantities of dust resulting from the handling of the material. During the cutting process proper it is not so much the dust of the cork itself as of the dirt, sand, etc., adhering to the cork bark. The amount of waste in cork cutting, however, is enormous, and it is only within very recent years that this waste has been turned to economic uses, chiefly in connection with the manufacture of linoleum. For the last-named purpose the cork waste is ground and subsequently mixed with linseed oil and other substances. Powdered cork is also used for filling in horse collars, for making mats, and for a number of other industrial purposes.

The sanitary aspects of cork cutting, sorting, and grinding have not attracted much attention, which might be accepted as evidence that the consequences of this employment are not decidedly injurious to health and a predisposing factor to consumption. But in view of the fact that the number of persons employed in this industry is not very large it is more probable that on account of its limited extent the employment has not attracted the attention of those who have made inquiry into the mortality of different trades.

In 1889 a report was made to the Department of State by United States Consul Monaghan on labor conditions in Mannheim, where the cork industry is of considerable extent. The consul states in his report that persons employed in the various cork factories "are, as a rule, rugged, healthy, and strong," and that "the factories are well ventilated and subjected to careful and rigorous inspection."

Thackrah very briefly refers to the employment, stating only that "cork cutters have little other inconvenience than the generally sedentary character of the employ. The dust which attends the burning of the cork produces a sense of suffocation, but this process is only occasional."

The process of cork grinding preliminary to linoleum manufacture has been described as follows:

> The crude material for the production of ground and powdered cork consists almost exclusively of the waste of cork industry, and is used extensively in the manufacture of linoleum. This waste consists of pieces of cork up to a cubic inch in size. The comminution, accompanied by a great generation of dust, is carried on by degrees. As a preliminary step machines divide the material into small pieces. The second step is grinding them in mills into a fine powder or flour. This work is not without danger, because the cork dust is easily inflammable and, if lighted, explodes with great force. The scraps of iron which frequently are among the particles of cork often cause explosion by producing sparks in passing through the mills. The parts of the machines which cut the cork into little particles are rapidly revolving adjustable rollers or plates studded with cutting teeth.
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> The pulverization of the particles of cork thus obtained is accomplished by two methods. According to the older method with rasps consisting of large, rapidly revolving drums studded with sawteeth, against which the material is pressed by two slowly revolving feeder rollers. In the newer method flat-stone mills are used, whose whole construction is very similar to the ordinary flour-grinding mills. The cork flour is passed through the mills several times until all the particles possess the required fineness. During these several passages the ground material is separated into various classes by means of drum sieves containing about 1,000 meshes to every square inch.
>
> As a result of this process, in which not even exhausters are efficient, it can easily be seen that the workman and the neighborhood are exposed to great annoyances because of the very fine consistency and exceeding small specific weight of the ground cork. This finely ground cork dust is carried away by the slightest disturbances of the

air and transported for long distances. It is very injurious to the respiratory organs.([a])

The preceding conclusions are confirmed by the opinions of other authorities on occupation diseases, although the industry, as previously stated, has not as yet attracted very much attention. Parry states that "explosions may arise during the powdering of the cork, or during the mixing of the cork and cement" in the process of linoleum manufacture,([b]) while Inspector Crampton, for the south London district, makes the following statement: "An industry which I have noticed as productive of much dust is the making of ordinary corks for bottles, and I have requested the introduction of fans to remove the dust at the point of origin."([c])

While the foregoing observations are not entirely conclusive and statistical data of sickness or mortality are not available, it is evident that the employment may properly be included in a classification of dusty trades, in which the exposure to dust inhalation is a contributory factor in the mortality from consumption. As indicated in the quotation from the Report of the Chief Factory Inspector of England, it is possible to materially improve the conditions of work by the introduction of effective ventilating apparatus. Further inquiry into the hygiene of this employment would be both interesting and valuable.

MANUFACTURE OF PEARL AND BONE BUTTONS.

The hygiene of button manufacture requires careful discrimination as to the method used in button making, which may broadly be divided into metallic and nonmetallic to distinguish precisely the specific character of the dust exposure of the employments. For the present purpose only the manufacture of nonmetallic buttons can be considered as falling strictly within the classification of occupations with exposure to organic dust.

Of the total button product of the United States in 1905, according to the census of manufactures, about half the product, as measured by quantity, consists of pearl buttons made from fresh-water or ocean shells, vegetable ivory, bone, composition, and buttons made of other materials of organic origin. The number of wage-earners employed in the button industry as a whole was returned in 1905 as 10,567, against 8,685 in 1900 and 3,831 in 1890. Of the 10,567 wage-earners employed in button manufacture in 1905, 5,085 are specifically returned as having been employed in the manufacture of fresh-water pearl buttons, while 1,001 wage-earners were employed in the manufacture of vegetable-ivory buttons. The number employed in other branches of the industry is not specifically returned.

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[a] "Factory sanitation and labor protection," by Dr. C. F. W. Doehring, Bulletin No. 44, Department of Labor, January, 1903, pp. 71, 72.

[b] The Risks and Dangers of Various Occupations, by L. A. Parry, M. D., p. 156.

[c] Annual Report of the Chief Inspector of Factories and Workshops for the year 1906, p. 13.

The manufacture of fresh-water pearl button blanks is centered in Iowa and Illinois, the manufacture of fresh-water pearl buttons in New York, Iowa, and Pennsylvania, the manufacture of bone buttons in Pennsylvania, of composition buttons in Pennsylvania and New York, of horn buttons in Connecticut, of ocean-pearl buttons in New York, New Jersey, and Pennsylvania, while vegetable-ivory buttons are made chiefly in New York, Massachusetts, and New Jersey.

On account of the wide dispersion of the industry the labor conditions naturally vary to a considerable extent, but the most important differences in the conditions affecting health are those arising out of the materials used in button manufacture.

In connection with the census of 1900 is given a brief outline of the industrial processes in the different branches of the industry, from which the following brief extracts are made:

Regarding the manufacture of horn buttons, it is stated that—

> The raw material of the horn button is generally the hoofs of cattle. The hoofs are boiled in large kettles, which process softens them; then they are cut by machines into pieces, which other machines form into buttons. These go under a hydraulic press, which stamps the desired patterns upon them. Still different machines are used for boring holes and for polishing.([a])

The process of making vegetable-ivory buttons, first introduced into the United States in 1859, is described as follows:

> The raw material is the seed of the fruit of Phytelephas Macrocarpa, a low-growing palm of South America; the principal shipping point for which is Colon, Colombia. The seed is commonly known as the ivory nut, and is about the size of a hen's egg. The albumen is close grained and very hard, resembling the finest ivory in texture and color. These nuts are either cut in halves, from which the buttons are sawed out, or sawed in small blocks, from which the larger buttons are formed. The vegetable ivory is especially adapted to the application of colors. The methods of manufacture of the vegetable-ivory buttons have changed very little since the time of its introduction here, but great progress has been made in the dyeing of the buttons in various colors and patterns, and also in the finish, and to-day the products of the home factories rival the European product. This branch of the industry ranks third.([a])

Closely resembling buttons made from vegetable ivory are buttons made from composition material, according to a process first introduced into the United States in 1875. It is stated these buttons closely resemble those manufactured from vegetable ivory and that they—

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 322.

> are made of plastic material, i. e., a mass which softens under the influence of heat and becomes hard when cold. The ingredients used are certain fossil and vegetable gums, combined with finely comminuted carbonate of lime, feldspar, mica, or kindred minerals. These ingredients are thoroughly mixed in steam-heated grinders. When the minerals are properly amalgamated with the gums, the mass is run off in sheets and allowed to cool. Later these sheets are placed on hot platens, contact with which softens them, and facilitates cutting into strips of convenient form for placing in the dies.([a])

Buttons are also made in large quantities from celluloid, potatoes, casein, blood, and other organic materials, a descriptive account of which is not available to sufficiently emphasize the possibly health-injurious processes arising in connection with their manufacture.

The most important branches of the button industry of to-day in the United States is the manufacture of pearl buttons, including fresh-water pearls from the Mississippi. In 1900 the production of these varieties of buttons formed 48.4 per cent of the total product reported for the entire button industry of the United States. This process was first introduced in 1855, having since grown to very considerable proportions. The mechanical processes of pearl-button manufacture as carried on in the United States at the present time are described in the following statement:

> After the mussels have been cooked and the meat removed, the shells are taken to the factories and stored in sheds. They are then sorted into three different sizes and soaked in barrels of water from three to six days to render them less brittle. They must be used while wet, otherwise they crumble under the saw. The next step is the cutting or sawing of the rough blanks. The shells are usually held with pliers while being cut, but some sawers hold them in their hands. The saws are hollow, cylindrical pieces of steel, 2 inches wide, and with a diameter corresponding to the size of the button. At one end these cylinders are provided with fine teeth; they are adjusted to lathes in which they revolve. As the sawer holds the shell against the saw, the blanks are cut out and passed back into the saw and saw holder and drop into a receiver. The next step is the dressing or grinding of the back of the blank to remove the skin and make an even surface. To accomplish this, each blank has to be held with the finger against a revolving emery wheel. Then comes the turning, by which the front of the button is given its form, including the central depression. When the holes are drilled the button is complete, with the exception of the polishing process, which brings out the natural luster which was lost in the grinding. It is this luster which gives the buttons their chief value. The polishing is effected by placing the buttons in bulk in large wooden tumblers or kegs, in which they are

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 322.

subjected to the action of a chemical fluid as the tumblers revolve. By mutual contact, combined with the effect of the fluid, the buttons become highly lustrous. Then they are washed, dried, and sorted into sizes and grades of quality. After being sewed on cards and packed in pasteboard boxes, the buttons are ready for the market.([a])

It is evident from the foregoing description that the sanitary conditions of this industry are more or less prejudicial to health, chiefly, of course, on account of the exposure to considerable and continuous inhalation of very fine organic dust. The subject has attracted the attention of most of the authorities on occupation diseases, and as early as 1832 Thackrah observed that—

> The makers of bone buttons are subjected to some dust, but this is not sufficient to produce sensible disorder. The makers of pearl buttons appear to suffer more. The pearl dust produces often bronchial irritation, and this excites pulmonary consumption in individuals predisposed to the disease. Both classes of button makers are, in Birmingham at least, generally intemperate, devoting two days a week to the impairment of their health.([b])

Halfort, writing in 1845, relies almost entirely upon Thackrah, confirming his conclusions that exposure to the dust of horn and mother-of-pearl is a predisposing cause in bronchial catarrh and in consumption of the lungs.

The first extended inquiry into the hygiene of the employment was made in France during the early fifties, reference to which is made in the report by Dr. Waller Lewis, published as a parliamentary report in 1855. The report calls attention to the generation of large quantities of dust, not only of the material itself but also of the grindstones used in grinding and polishing processes. Of the dust produced in the manufacture of mother-of-pearl, it is stated that—

> This dust, of a yellowish white color, is exceedingly abundant; it is very light, and composed of small grains, excessively thin, which give to the touch a rough and sandy sensation. As soon as one enters a workshop where five or six cutters are working, you are suffocated by this dust, and feel a slight smell of animal matter. This odor is due to the composition of the shells, which inclose an organic animal matter, more or less abundant, according to the age of the mollusk, etc. The fibrous and nacreous structure is that part which generally contains most animal matter, and consequently gives off most of the dust. This explains how it is that the water in which the grindstone bathes becomes so quickly putrid, and renders the work of the mill still more insalubrious.([c])

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[a] Report on Manufactures, Part III, Twelfth Census of the United States, 1900, p. 323.

[b] Effects of Arts, Trades, and Professions on Health and Longevity, by C. Turner Thackrah, 1832, p. 55.

[c] Parliamentary Report, The Laws and Ordonnances in Force in France for the Regulation of Noxious Trades and Occupations, by Dr. Waller Lewis, p. 59.

The resulting consequences of continuous and considerable exposure to the inhalation of dust of mother-of-pearl are stated to be chronic bronchitis, hemoptysis, ophthalmia, and other afflictions, for the author of the report observes that—

> The thin and abundant dust which escapes from the shell when being sawn, and while being worked on the mill or stone, evidently causes these affections of the organs of respiration and sight. Completely inert, this dust enters into the ramifications of the bronchi, but seldom into the smallest of them, and produces in them an irritation which augments the mucous secretion; the mucous membranes thicken, and cause, especially in the morning, and sometimes during work, a very exhausting cough, followed by considerable expectoration. Chronic bronchitis, frequently complicated with hemoptysis, and still more frequently with pulmonary emphysema, quickly ensues.
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> The women who are mostly employed in * * * placing the buttons on cards, suffer much from chlorosis and similar anæmic complaints, but this depends much upon their bad sanitary state, and on the sedentary nature of their employment. The workmen do not appear to be more subject to phthisis than others, but they are very liable to chronic troublesome asthma,[a] which does not leave them even after their change of employment.[b]

In 1861 the medical officer of the Privy Council published a report on the hygiene of button making in the Birmingham district, chiefly with reference to the manufacture of buttons made of mother-of-pearl. It is stated in the report that—

> Button making is one of the staple manufactures of Birmingham, and affords employment to a large number of persons of both sexes and of all ages from 6 or 7 years upwards. It is almost exclusively the pearl-button makers, of whom there are a great number in Birmingham, who suffer from inhaling dust. Bone and vegetable ivory button makers are much less exposed to breathe a dusty atmosphere, and no conclusive evidence of their suffering from irritative disease of the lungs was obtained. Pearl buttons are cut out of shell, and both in the process of cutting out the disks, and also in those of forming and polishing the buttons on the lathe, much dust is evolved. The danger to health from inhaling dust was aggravated in several of the button factories, visited during the inquiry, by the overcrowded, ill-ventilated state of the workshops * * *.[c]

After pointing out that many females were employed in this manufacture, and that many of the laborers work for long hours, often until far into the night, the report continues that—

> There was much discrepancy in the evidence regarding the influence of the occupation on health, collected in different shops used for

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[a] This form of asthma was, in all probability, fibroid phthisis, not clearly differentiated from general tuberculosis.

[b] Parliamentary Report, The Laws and Ordonnances in Force in France for the Regulation of Noxious Trades and Occupations, by Dr. Waller Lewis, p. 59.

[c] Fourth Report of the Medical Officer of the Privy Council, 1861, pp. 143, 144.

> the manufacture of pearl buttons. In some instances the operatives declared their occupation to be entirely harmless; whilst in others abundant evidence was obtained, from both masters and men, that the work people employed in this branch of manufacture suffer much from irritation of the lungs in consequence of inhaling air charged with dust. Further inquiry, and especially a careful examination of the processes of manufacture, showed that this contrariety of evidence arose from a corresponding difference in the kind of article manufactured; much less dust being created in making small buttons, such as are suitable for shirt fronts and similar purposes, than in making those of a larger size.[a]

The foregoing extract emphasizes the extreme care necessary in discriminating between the different employments of button manufacture. The report states further that—

> The injurious influence of the pearl-button manufacture on health was further confirmed by evidence afforded by Doctor Russell, physician to the general hospital, * * * and by Doctor Johnstone, another of the physicians to the same institution. One manufacturer represented himself as suffering from the ill effects of the occupation, and said that many of his work people were affected in a like manner, few escaping the injurious effects of their employment on reaching the middle period of life. The superintendent of another factory reported himself to have long suffered from cough and expectoration produced by inhaling the mother-of-pearl dust, adding that this result of the occupation is now so well known that many of the benefit societies of Birmingham will no longer admit pearl-button makers into membership. As might be expected, the disease from which the pearl-button makers suffer in consequence of their trade is chronic bronchitis. This disease runs a very slow course, often lasting many years before finally disabling its subject. Hemoptysis appears to be a not infrequent attendant on the complaint when fully established.[a]

The inhalation of mother-of-pearl dust is, however, not only injurious to the lungs and air passages, but, as pointed out by Dr. B. W. Richardson in 1876, the dust is also a causative factor in producing a serious disease of the bones, to which the name of "osteitis" has been given to clearly differentiate it from other and perhaps similar afflictions. According to Doctor Richardson, in his lecture on "Unhealthy trades," delivered before the Society of Arts in 1876—

> This disease, first described by Englisch, as attacking mother-of-pearl turners, has since been studied by Gussenbauer, Klauser, Hirt, and Merkel. Gussenbauer and Klauser have made an analysis of the three different layers of which the pearl shell is composed. The most internal layer is the one used by mother-of-pearl turners. It contains of organic matter insoluble in water 5.57, of organic matter soluble in water 0.11, of water 0.47, of carbonate of lime 93.555, and of alkaline salts 0.295 per cent. The disease of the bones that has

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[a] Fourth Report of the Medical Officer of the Privy Council, 1861, p. 144.

been observed as incidental to the turning of this substance attacks only youths, before the skeleton is fully developed. It is characterized by a sudden pain, which is neither increased by pressure nor motion. A swelling, first from the periosteum, or covering of the bone, and afterwards from the bone itself, shows itself at the ends of the bones at what are called the "epiphyses." The soft elastic swelling is sometimes fluctuating. Its development is accompanied by fever; it enlarges in the direction of the length of the bone; in time it becomes harder, and it rarely suppurates. As a rule, the tumor resolves. It often attacks several points of the skeleton at the same time, and it has a tendency to return. The bones that have been observed as affected in seven cases under the observation of Gussenbauer, in youths of from 14 to 16 years, are the radius of the arm, the ulna, the lower jawbone, and the thigh bone. In one instance several bones were attacked successively in the same subject—namely, the left metatarsal and cubit bones, the left shoulder blade, the left arm bone, the humerus, the cuboids, and the right astragulus or heel bone.

Gussenbauer, to whom I am indebted for these descriptions—the disease not yet having been described in our country—is of opinion that the malady is produced in the following manner: The dust enters the lungs, penetrates the cellular structure of those organs, enters the lymphatic vessels and glands, and is decomposed. Under the influence of the carbonic acid of the venous blood, the calcareous carbonates are dissolved, the insoluble organic matter remains, and is the substance called "conchyoline," discovered by M. Fremy. This penetrates the vessels, and is carried by the current of the arterial blood into the minute vessels. In the reduced vessels of the bone at the epiphyses, it finds resistance and deposits there, causing the swelling and the other symptoms which have been described above, and which continue until the foreign body is resolved and removed. Such is the ingenious theory of the origin of the bone disease of the pearl turner. We need not discuss the theory, it is sufficient to have before us the facts at this moment.([a])

The hygiene of pearl-button manufacture was also considered by Arlidge, who, in his work on diseases of occupations, sums up his conclusions in the statement that—

> The cutting, turning, drilling, and polishing of mother-of-pearl are attended by a large amount of heavy dust, which, from its composition, operates on the respiratory organs in the same fashion and degree as mineral dust. What are the lesions produced by its inhalation we have the great advantage of learning from Dr. Headlam Greenhow, who described them in the Transactions of the London Pathological Society (Vol. XXI, p. 66). This excellent pathologist stated that he had satisfied himself of the identity of the lung affections of these workmen with those "of miners, potters, flax dressers, and other operatives exposed to inhale air charged with dust." The symptomatology, moreover, is alike between them, and especially the long existence of shortness of breath before cough and other indications of broken-down health and lung lesion evidence themselves.([b])

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[a] Lecture on "Unhealthy trades," by Dr. B. W. Richardson, Scientific American Supplement, February 26, 1876, p. 138.

[b] Diseases of Occupations, by J. T. Arlidge, pp. 323, 324.

Arlidge refers also to an account of the diseases of pearl-button makers by Layet, who, in his opinion, rightly insists that men in this employment suffer increased injury—

> by leaning forward in working the lathe, and thereby bringing the nose and mouth into proximity with the shell and the dust arising from it. He also remarks on the sickening odor of the dust, dependent on the remnants of decomposing animal matter existing in it. Besides the respiratory troubles—obstinate cough, asthma, and free expectoration of mucopus, and occasionally of blood in small quantity, he notes the occurrence of blepharitis and conjunctivitis, and the formation of fissures in the skin of the hands. A concluding observation is, that although they suffer so seriously with lung affections, their mortality from tubercular phthisis does not exceed the ratio found among other artisans.(a)

Finally, according to Arlidge—

> The ill consequences of mother-of-pearl work are aggravated by the accidental circumstance, that it is an occupation open to any mechanic of ordinary skill without the expenditure of capital upon plant. Few tools are required, and it can be carried on by females and children in their cottage homes, where sanitary arrangements to lessen its evils are unknown or unused, and the hours of labor extended at pleasure. Another reason for a high mortality is to be found in prevailing intemperance and dissipation, coupled with a low rate of earnings, and indifferent, if not decidedly bad food and lodging.(b)

While the various authorities on the diseases of workers in mother-of-pearl are not entirely agreed as to the health-injurious consequences of the employment, it is evident that the dust generated during the various processes is seriously detrimental to health even though not necessarily a decidedly predisposing cause of consumption. Every descriptive account of the industry, including a special report of the Iowa bureau of labor statistics (1898) and several illustrated accounts in the Scientific American, emphasizes the serious risk of dust exposure in the different employments and the necessity of adequate and effective ventilating apparatus. While the conditions are possibly more serious in the manufacture of pearl buttons than in the manufacture of buttons of other material of organic origin, the conclusions which apply to the former also apply more or less to the latter.

Oliver, in his article on "Dust as a cause of occupation disease," illustrated by micro-photographs, includes an illustration of mother-of-pearl dust, observing that Hirt regarded this trade as extremely dangerous and found that from 15 to 16 per cent of the men engaged therein died from phthisis. After referring to the conclusions of Gussenbauer, that turners of mother-of-pearl suffered from a pe-

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[a] Diseases of Occupations, by J. T. Arlidge, p. 324.

[b] Idem, p. 326.

culiar affection of the bones, also referred to by Doctor Richardson, Oliver states that he had visited mother-of-pearl grinding shops in Sheffield and had questioned the workmen employed, but had been unable to find any evidence to support the contention of Gussenbauer as to the occurrence of osteomyelitis resulting from the absorption of carbonate of lime from particles of shell inhaled during the mechanical processes of the industry. He concludes, however, with the statement that the grinding of mother-of-pearl in Sheffield is done by the wet process, which may account for the material difference in the results and conditions observed.([a])

The industry is very briefly referred to in the report of the state board of health of Massachusetts on factory conditions for 1907. It is stated that much dust arises in the several processes of drilling, turning, and polishing, but that the dust is very light, and in well-equipped factories is effectively carried away by exhaust blowers. Polishing by the wet process is unattended by dust. Two pearl-button factories were inspected but no objectionable conditions whatever were found to exist. The light, ventilation, and general health of the employees were reported as good.

It is evident from the foregoing summary of observations by the leading authorities on the hygiene of pearl and other button manufacture of organic origin that the conditions affecting health vary widely and probably in exact proportion as effective methods of ventilation and dust removal are employed.

While the available evidence regarding the hygiene of button manufacture, chiefly with reference to the making of buttons of mother-of-pearl, is amply sufficient to warrant the conclusion that the employment requires to be classed among the dusty trades, with a decided liability to respiratory diseases, and in particular chronic bronchitis, which, according to circumstances, may assume the form of either fibroid phthisis or general tuberculosis, it is evident from the various accounts which have been rendered that in many of the establishments the conditions affecting health and life are very far from what they should be, and that the employment is one which requires strict sanitary supervision through both the board of health and the factory-inspection authorities.

The vital statistics of button makers are limited to the recorded industrial mortality statistics. These include 127 deaths from all causes, 48, or 37.8 per cent, of which were from consumption. Of the mortality of button makers from respiratory diseases other than consumption 11 were from pneumonia, 1 from asthma, and 2 from less frequent respiratory diseases. Consumption and other respiratory diseases together caused 48.8 per cent of all the deaths of button makers. The following detailed tabular presentation of the proportionate consumption mortality by divisional periods of life shows an excessive mortality from consumption among button makers at all ages. The excess is most pronounced at ages 15 to 24, when out of every 100 deaths from all causes 50.0 were caused by consumption against a normal expected proportion of 27.8.

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[a] Dangerous Trades, by Thomas Oliver, p. 276.

PROPORTIONATE MORTALITY FROM CONSUMPTION AMONG **BUTTON MAKERS,** 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for button makers from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths of button makers, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Button makers.	Males in registration area, 1900 to 1906.
15 to 24 years	24	12	50.0	27.8
25 to 34 years	31	16	51.6	31.8
35 to 44 years	32	12	37.5	23.6
45 to 54 years	24	6	25.0	15.0
55 to 64 years	6	1	16.7	8.1
65 years and over	10	1	10.0	2.7
Total	127	48	37.8	14.8

The mortality statistics of industrial insurance experience fully confirm the preceding observations and quite conclusively prove that button makers as a class are exposed to conditions more or less injurious to health and life. The industry is one of sufficient importance to warrant a more thorough and qualified investigation than has thus far been made.

COMB MANUFACTURE.

The general hygiene and labor conditions of comb manufacture are much the same as in the manufacture of buttons of similar material. Combs, including hairpins and ornamental articles for personal use, are made of a large variety of substances, chiefly horn, bone, ivory, tortoise shell, composition material, celluloid, and the various metals. It is not possible to differentiate clearly the various branches of comb manufacture according to the kinds of materials used, but for the present purpose only those branches are considered in which the material used is of organic origin.

The census report on manufactures for 1905 returned 42 establishments engaged in the manufacture of combs, employing 1,806 wage-earners, including 322 women and children. Most of the establishments are of small size, but in 8 out of the 42 more than 100 persons were employed. Including the making of hairpins and similar articles for ornamental use, the industry is of larger extent than indicated by the census report. The industry has increased rapidly within recent years—from 742 wage-earners in 1890 to 1,399 in 1900 and to 1,806 in 1905.

The hygiene of comb manufacture has not attracted much attention, but as early as 1832 Thackrah observed regarding comb makers that they were exposed to a disagreeable odor from the bullocks' hoofs, but that they were healthy and long-lived.

Halfort, writing in 1845, did not consider the occupation except in so far that he observed with reference to the manufacture of horn buttons that considerable dust was generated during the processes of turning, grinding, and polishing, in consequence of which serious lung diseases were frequently met with among the workmen.

The first extended consideration given to the industry was by Hirt, who, writing in 1871, included horn and bone dusts as practically identical in their effects upon the human organism. He called attention to the large quantities of dust produced during the processes of horn and bone sawing, boring, filing, and turning, resembling in its exterior effects the exposure to flour dust in flour mills. Microscopically examined, the dust was of infinite variety in its mechanical properties, the amount of dust produced being largest, as a matter of course, in bone-grinding establishments. The first effect of bone dust, according to Hirt, was but very slight, and even continuous exposure on the part of the workmen did not apparently lead to serious injuries, so that no complaint on this account was made to Hirt by the workmen personally interrogated. Individual cases were brought to his attention in which after fifteen years of work no injury to the lungs could be traced to the continuous and considerable exposure to bone dust. In contrast, however, he discovered that a predisposition to chronic pneumonia and similar lung affections was common, and that these diseases formed a large proportion of those occurring among the workmen. It was ascertained by Hirt that about 20 per cent of the morbidity was from phthisis, and that chronic catarrh of the respiratory organs was extremely common, without, however, assuming the most serious type of chronic asthma. In a general way, however, the health of the workmen was very good and the average age at death was between 57 and 60 years. These statements relate almost entirely to men exposed to bone dust; and, in fact, Hirt refers particularly to bone turners, stating that according to observed experience they were liable to a relatively high general morbidity, exceeded only by a few other occupations, among which he mentions rope makers and bakers. Among bone turners, according to Hirt, phthisis caused 16.2 per cent of the morbidity, asthma 1.8 per cent, chronic bronchial catarrh 9.3 per cent, and pneumonia 5.6 per cent, a total of chest and throat affections of 32.9 per cent, which, however, compared or contrasted with the morbidity in certain other employments with continuous and considerable dust exposure, was not considered excessive by Hirt, who wrote, of course, with special reference to observed conditions of labor and life in Germany. The favorable conclusions of Hirt, however, were apparently confirmed by those of Lombard, who ascertained an average age at death in the case of bone turners of 57.4 years, arrived at, however, upon the basis of only a very small number of observed cases.

With special reference to horn dust, Hirt states that on account of the limited extent of the industry no very conclusive observations had been made a matter of record, and the employment was complicated by the fact that horn dust was often mixed with bone dust, making it difficult, if not impossible, to differentiate between the exact effects upon the human organism of either of these two varieties of dust. In the manipulation of horn for grinding, polishing, turning, and boring purposes, according to Hirt, the quantity of dust generated was, however, much less than in the case of bone manufacture, as by its mechanical properties the dust particles of horn were heavier and not so easily mixed with the general atmosphere. Microscopically examined, however, it was ascertained that there were more sharp and pointed particles of dust produced in horn manufacture, explaining the more immediately injurious or irritating effects of horn than of bone dust exposure. While, according to Hirt, there were few workmen exposed to horn dust who were entirely free from catarrh, phthisis was not excessively common. He states that the proportion of cases of phthisis in the general morbidity was only 15 per cent, or less than among bone turners, as previously explained. The small number of men employed exclusively in the manufacture of articles of horn precluded entirely safe conclusions.

The hygiene of comb making is considered by Arlidge in his treatise on the Diseases of Occupations. After pointing out that the industry is of very limited character, and that at the time he wrote (1892) it was carried on in England in small factories, which had superseded domestic workshops, and, further, that the material used is chiefly of animal origin in the shape of horn, bone, tortoise shell, or ivory, he observes that—

> The operations concerned in making these several articles are simple, and require no elaborate machinery. Those suggestive of ill results to health are chiefly sawing and turning. The maceration of horns in water to open them out, and their subsequent flattening by superimposed pressure, are operations devoid of injury to health; but the next proceeding, that of cutting them into laminæ by means of circular saws, is productive of a large quantity of dust. Polishing is free from this evil, as it is done by heat and pressure. Tortoise shell is dealt with in a similar fashion, but requires, as a preliminary

process, boiling for some time in water to which salt is added. Both horn and tortoise shell can be cast in molds by the aid of heat, after first being reduced to powder.([a])

It is evident from the foregoing account, based no doubt on personal observation, that a considerable quantity of dust is generated in the process of comb manufacture, but according to Arlidge the dust, although visible in the form of a cloud, is apparently almost harmless. This he explains is probably the result of its animal origin, which prevents its being as much of an irritant to the pulmonary tissue as dusts of mineral and metallic origin. Arlidge, however, agrees with Hirt, that it is entirely conceivable that the dust may be the cause of bronchitis. He continues his remarks in part as follows:

> According to Hirt, dusts of animal origin are more prejudicial to health than those derived from the vegetable world; and that where the latter produce 11 to 13 per cent. of the mortality of sick people, the former cause 20 per cent. We have no means of testing the accuracy of these comparative figures, but must feel some scepticism regarding them. As to the dust of mother-of-pearl, and, in a lesser degree, that of fossil ivory, we are quite ready to admit their position among the more destructive varieties of dust. But with regard to bone, tortoise shell, and horn, there is no evidence that the dust generated by their employment is of like serious moment to health. In fact, looking to what experience teaches regarding horn, we are justified in the belief that substances of a gelatinous nature are but slightly obnoxious to the lungs.([b])

With special reference to persons employed in the manufacture of combs and other small articles made from such substances, Arlidge observes that they are admittedly very free from ill consequences, and apparently look well nourished. The latter he attributes in part to the gelatinous dust in which they work, but without going so far as to admit a nutritious value to the material, he is of the opinion "that the finely powdered horn tissue may undergo dissolution in the warm secretion of the mucous membrane and undergo absorption, just as happens with catgut ligatures left within a cavity of the body."

The evidence available to Arlidge and others was, however, apparently very contradictory, for he concedes that the makers of bone and of ivory buttons and of other articles of the same material are known to suffer cough and shortness of breath after following the trade for a number of years. He refers to the factory report for Sheffield, for 1887, where it is stated that men employed in the occupations referred to set free such clouds of dust that in a short time it is impossible to see across the workshop, and that this bone dust is admitted to be very injurious.

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[a] Diseases of Occupations, by J. T. Arlidge, p. 219.

[b] Idem, p. 421.

The pathology of horn-dust inhalation was briefly considered by the departmental committee on compensation for industrial diseases in 1906. Dr. Arthur Hall, of Sheffield, before this committee, made the following statement:

> I have no positive evidence that horn by itself is an irritating dust. But these men work in various dusts, and one is unable to say always from the lung or from the symptoms exactly which dust is the more important as an irritant, and one has to, more or less, class them all together, because sometimes they are working in one kind and sometimes in another.([a])

This favorable view of the comparative harmlessness of horn dust inhalation was not, however, supported by any positive evidence or exact statistics of mortality and morbidity of men employed for any considerable period of time in the manufacture of horn combs and other ornamental articles of the same material.

With special reference to American conditions, the hygiene of the industry is discussed in the special report of an investigation of conditions affecting the health or safety of employees in factories and other establishments by the Massachusetts state board of health, which refers to the town of Leominster, where there are no fewer than 29 establishments, which give employment to nearly 1,900 persons in the manufacture of combs and hairpins of horn and celluloid. There are 3 other establishments of the industry in Massachusetts, 2 in Newburyport and 1 in Northborough, which give employment to about 300 persons.

The process of hairpin manufacture from horn and similar material is explained as follows:

> The pressed horn is first soaked in hot water for two or three days, after which it is shaved and split. The next process is known as "polking," which includes "blanking" and "centering." Briefly stated, a flat piece of horn, little larger than is necessary for the production of two pins, is placed under the polking machine, which cuts out the pins and leaves the blank and center pieces. Such a machine is known as a double cutter; a single cutter cuts out but one pin. As the stock is held by the employee while the machine knife comes down and cuts it, there is some danger of losing a portion of the finger tips through inattention or lack of care.([b])

Subsequent to this process the pins are taken to the rounding or edging machine, which rounds the edges, and in so doing gives rise to considerable horn dust, most of which, however, in some factories at least, is removed by blowers.

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[a] Report of the Departmental Committee on Compensation for Industrial Diseases, Minutes of Evidence, p. 49. London, 1907.

[b] Thirty-eighth Annual Report of the State Board of Health of Massachusetts, p. 505.

The next process is pointing with a so-called pointing machine, and according to the report referred to—

> The dust from this machine flies about the operator's face more freely than that from the rounding machine; but the best, and indeed most, of the factories connect these machines with exhaust blowers. From the pointing machines the pins are conveyed to the "tumblers," which are square boxes, lined with spruce, and containing fine pumice stone and water. In these they are revolved for a while, and then they are removed, rubbed, and colored with a mixture which contains usually anilin dyes, red lead, lime, and bicarbonate of sodium (saleratus). Finally, the pins are polished, bent and packed.[a]

The processes followed in the manufacture of combs conform in a general way to the preceding descriptive account of the manufacture of hairpins.

Since an increasing proportion of articles of this kind are now made of celluloid the following extracts from the report previously referred to are included, the material used in the manufacture consisting of sheets of celluloid which are cut into small pieces by means of a long-bladed knife similar to that used in cutting paper, and this process is technically known as "slashing." The subsequent processes are described in part as follows:

> The small pieces are taken to the cutting machines, which cut out the teeth of the comb. The next process is "polking," in which portions of what is to be the back of the comb are removed. For plain work, dies or cutters are used; and a curved cutting-edge die is stamped through the material, removing the blank or waste pieces, and leaving the comb of the desired shape and design (p. 505).
>
> The comb is next taken to a machine which bevels the edges. The beveler consists of a flat steel plate, through the center of which is an opening for a small "wing burr," which is placed up through the opening to the height desired. The steel burr, or beveler, makes many revolutions per minute, and on coming in contact with the celluloid gives rise to considerable dust. The dust is, however, coarse and heavy, and most of it flies away from the operator's face. When the burr is put through the opening in such a way as to be mainly on the upper part of the steel plate, and is revolving rapidly, there is a chance of injury to the operator's fingers while holding the comb. For protection against this accident, an ingenious brass collar or "sleeve" has been devised, and is used by some of the workmen.
>
> Circular saws then shape the bottom of the teeth to conform with the bottom of the back of the comb, the teeth having been cut straight in the first process of cutting. The saws are called "bottoming saws," and are generally guarded. A glass front, through which the employee watches his work, protects his face, and especially his eyes, against the chips of celluloid, which are thrown off with considerable force. The dust is coarse, and most of it is removed by efficient blowers.

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[a] Thirty-eighth Annual Report of the State Board of Health of Massachusetts, p. 505.

> The next operation is "pointing" the teeth by sand wheels or steel burrs, and the latter go around so swiftly that a very strong exhaust draft does not take away all of the dust. Workmen state that the dust which flies toward the face occasionally strikes the eyes, acting like cinders in this respect; but that it is not inhaled, since the particles are heavy. The sand wheel makes, perhaps, a finer dust; but this is moist and more or less matted together, and interferes little, if any, with the comfort of the workman. Good blower systems are required by insurance companies wherever blowers may be used to advantage. Dust and shavings are not allowed to accumulate on the floor and elsewhere, on account of danger of fire, celluloid being extremely inflammable.
>
> The backs of the combs are next engraved or carved by hand or machine. The teeth are then "grailed" by a machine which rounds the edges of the teeth. The sides or ends of the combs are then smoothed on "ending" machines or by hand.([a])

It is explained that all the processes thus far mentioned and described in sufficient detail to emphasize the hygienic and more or less health-injurious circumstances of the trade are technically known as bench work and that the employees are mostly men, but including a few boys. After the preceding processes the combs are brought to the so-called rubbing room, where the workman stands facing his stall, with his back toward a window and fronting a trough which contains a mixture of sifted coal ashes and water, over which is a rapidly revolving cloth, or cloth and brush, ball. It is stated that—

> He holds a comb against the revolving wheel, for the purpose of "rubbing down" the surface so that the comb may better take the finishing processes. With the ball making from 1,200 to 1,400 revolutions a minute, the workman becomes covered with a very fine spray of wet ash dust, and the picture of 15 or 20 men in one of these rooms is far from inviting. The room itself is plastered with ash mud, the window panes are daubed with it, and the employees are sprinkled with it from head to foot.([b])

In connection with this process a strong odor of camphor is perceptible, which is a component of celluloid, and brought out by the friction of the rubbing. Whether this is injurious to health is not known. The rooms in which the work is carried on are commonly in more or less damp basements, which themselves are undesirable, according to the report, from a sanitary view, as workrooms. Regardless of this fact, however, and of other conditions more or less injurious to health, the employees are satisfied with their work, and many have been from five to twenty years at the trade without any visible effects of the employment. In fact, in the rubbing process some of the men have been employed from five to thirty years. Some of the rubbing balls, so called, are made entirely of carpeting, while others have layers of Tampico grass between the carpeting. To keep the balls in proper condition a process of trimming is necessary, which is described as being very dusty work and which is done in some shops in the rubbing room, while in others a small dust room is especially constructed for the purpose. In this process some men use respirators or sponges while doing the work, but most of them do not.

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[a] Thirty-eighth Annual Report of the State Board of Health of Massachusetts, p. 506.

[b] Idem, p. 507.

The polishing process is also performed on rapidly revolving balls made of new cotton cloth, with the use of rotten stone and lard oil. This process, it is stated, gives rise to more or less lint and mineral dust; but circular pieces of pasteboard or wooden disks are placed over the wheels to keep the dust from the operatives, and none appears to fly directly into their faces.

The subsequent process of the "bending" of the combs is chiefly the work of women and girls, and is apparently not accompanied by the production of any considerable quantity of dust. Steam tables, or so-called "heaters," are provided for the work, and these are covered with asbestos, on which the employees put blocks or "forms" of the kind desired, containing the combs, which are bent and caused to retain the shape which the particular blocks or "molds" give them. This bench work, it is stated in the report, is carried on in rooms heated to a considerable temperature, and the air in winter weather toward night becomes especially dry and foul.

The final processes of polishing with revolving chamois balls are also largely the work of women and girls, but whether accompanied by much dust is not stated.

It is evident from the foregoing descriptive accounts that considerable dust is generated in the different processes of the manufacture of combs and similar ornamental articles made of horn, bone, celluloid, etc., but that the conditions naturally vary widely or according to the processes made use of, or the particular material employed. The investigation by the Massachusetts state board of health is in part summed up in the statement that—

> In the horn and celluloid industry the tendency is to have the work of soaking stock and rubbing or polishing with ashes—work which involves moisture and dust in the atmosphere of the room—done in the basement; whereas these processes should be carried on above ground, in light, large, airy rooms, preferably, perhaps, in the second story.
>
> The "tumbling" room, where pumice stone and water are used to smooth the pins, is usually in the basement. If the basement is light and well planned, it is a good place for this work; but usually the room is dark, and far from being pleasant to work in. It is true that employees do not stay long at a time in these rooms; but a needed improvement is to have them in a well-lighted place, properly venti-

lated, with cement floor and a catch-basin connected with the sewer, to provide for thorough cleaning of the room.

A large number, if not most, of the "rubbing rooms," in which revolving carpet buff balls and sifted coal ashes are used, are in basements, which, if not damp, are unpleasant to work in, or in quarters which are open to severe criticism from a hygienic point of view. An improvement to be strongly recommended is to require, so far as is reasonably practicable, as efficient protection to the health and comfort of the operatives as is provided in the best establishments.[a]

It is made evident by the foregoing descriptive account of the various branches of the industry that the dust nuisance can be materially reduced by effective ventilating apparatus. Reference is made in the report to one model establishment, where blowers are provided for the pointing machines but not for the rounding machines, since it is considered unnecessary, as the horn dust is moist and flies about but little. Whether this theory is in exact conformity to the facts is somewhat doubtful.

SUMMARY OF CONCLUSIONS REGARDING OCCUPATIONS WITH EXPOSURE TO ORGANIC DUST.

In the preceding observations and statistical data 15 specific occupations with exposure to organic dust have been considered in more or less detail. The data for some of the occupations are too meager to warrant final conclusions, but the information presented is quite decidedly suggestive of health-injurious conditions in certain of the occupations. The United States census returns of 1900 give the age distribution of millers, bakers, confectioners, tobacco and cigar factory operatives, leather curriers and tanners, harness and saddle makers, glove makers, and boot and shoe makers, the aggregate number of the males of known ages 15 years of age and over being 472,160. Of this number 25,336, or 5.4 per cent, had attained to the age of 65 years and over, against a normal expected proportion of 4.7. In some of the occupations, however, notably tobacco and cigar factory operatives (1.8 per cent), glove makers (2.3 per cent), bakers (2.4 per cent), leather curriers and tanners (2.9 per cent), and confectioners (3.1 per cent), the proportion of employees attaining to age 65 and over was considerably less than the average normal expected (4.7 per cent) on the basis of all occupied males in continental United States. In fact, in only three occupations did the proportion of employees attaining to age 65 and over exceed the normal expected proportion of 4.7 per cent, namely, millers (7.6 per cent), harness and saddle makers (7.2 per cent), and boot and shoe makers (8.5 per cent). The number of persons employed, however, in these three occupations is sufficiently large to raise the general average of the aggregate employees in the occupations considered to 5.4 per cent. The details of the age distribution are given in the following table by divisional periods of life, together with the corresponding percentage distribution of all occupied males, the data for both groups being derived from the United States census of 1900:

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[a] Thirty-eighth Annual Report of the State Board of Health of Massachusetts, pp. 508, 509.

NUMBER AND PER CENT OF MALES IN EACH AGE GROUP IN OCCUPATIONS EXPOSED TO ORGANIC DUST, COMPARED WITH NUMBER AND PER CENT IN ALL OCCUPATIONS, 1900.

[From report on Occupations, Twelfth Census of the United States, 1900.]

Age.	Males in occupations exposed to organic dust.		All occupied males.	
	Number.	Per cent.	Number.	Per cent.
15 to 24 years	113,687	24.1	5,933,720	26.0
25 to 34 years	123,834	26.2	5,993,847	26.3
35 to 44 years	101,206	21.4	4,704,682	20.6
45 to 54 years	67,056	14.2	3,250,259	14.3
55 to 64 years	41,041	8.7	1,856,181	8.1
65 years and over	25,336	5.4	1,063,856	4.7
Total	472,160	100.0	22,802,545	100.0

This analysis as here given in the aggregate for all occupations considered would not by itself indicate that the conditions of employment in the various occupations considered predispose to any considerable degree to an excessive mortality as the result of exposure to health-injurious dust. A more detailed analysis, however, of the age distribution of employees in the separate industries considered, as given in Table II of the appendix, is much more indicative of serious health-injurious conditions in certain of the occupations, and particularly tobacco and cigar factory operatives, glove makers, bakers, leather curriers and tanners, and confectioners.

It is possible to present a combined summary of the United States census vital statistics of persons employed as millers, bakers and confectioners, cigar makers, tobacco workers, leather makers, leather workers, and boot and shoe makers. A comparison of the general death rates in these combined occupations with the corresponding death rates of occupied males generally shows a favorable general mortality experience at all ages in the combined occupations of this group. The death rate from consumption was also slightly below the normal expected, and the death rate from other respiratory diseases was 1.71 per 1,000 for the combined occupations of this group as against 1.97 for all occupied males. The details are presented in the table following.

MORTALITY FROM ALL CAUSES AMONG OCCUPATIONS EXPOSED TO ORGANIC DUST IN THE REGISTRATION STATES, COMPARED WITH THAT OF ALL OCCUPIED MALES IN THOSE STATES, 1900, BY AGE GROUPS.

[From report on Vital Statistics, Twelfth Census of the United States, 1900.]

Age.	Occupations with exposure to organic dust.			All occupied males.		
	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.	Number employed.	Number of deaths from all causes.	Rate per 1,000 from all causes.
15 to 24 years	44,244	161	3.64	1,259,471	6,486	5.15
25 to 44 years	96,484	651	6.75	2,680,241	23,541	8.78
45 to 64 years	44,308	779	17.58	1,282,259	25,582	19.91
65 years and over	9,392	861	91.68	283,810	27,888	98.44
Total	194,428	2,452	[a] 12.61	5,505,281	83,447	[b] 15.16

[a] From consumption there were 443 deaths, or a rate of 2.28. From other diseases of the respiratory system there were 333 deaths, or a rate of 1.71.

[b] The rate of mortality from consumption was 2.37; from other diseases of the respiratory system, 1.97.

The occupation mortality statistics of Rhode Island for 1897 to 1906 are available for seven specific occupations of this group, and when combined return 391 deaths from all causes, of which 54 were from consumption and 43 from respiratory diseases other than consumption. The corresponding percentages were 13.8 of deaths from consumption of persons employed in occupations with exposure to general organic dust against 17.8 for occupied males generally in the State of Rhode Island. The percentage of deaths from respiratory diseases other than consumption was 11.0 for the occupations in this group against 12.5 expected.

The English vital statistics for this group of occupations are available for millers, bakers and confectioners, tobacco workers, tanners, curriers, saddle and harness makers, and shoemakers. When the returns for these occupations are combined, they exhibit a somewhat excessive death rate from all causes at ages 20 to 24, but the general death rates for these occupations are slightly favorable at the other ages. The mortality from consumption, however, was excessive at all ages, the excess being greatest at ages 20 to 24, when the consumption mortality rate per 1,000 of persons employed in occupations with exposure to general organic dust was 2.29 against 1.55 for all occupied males. The mortality from respiratory diseases other than consumption was slightly favorable at all ages except 45 to 54.

MORTALITY FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER DISEASES OF THE RESPIRATORY SYSTEM, IN OCCUPATIONS EXPOSED TO ORGANIC DUST, COMPARED WITH THAT OF ALL MALES IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Age at death.	Death rate per 1,000 due to all causes among—		Death rate per 1,000 due to consumption among—		Death rate per 1,000 due to other diseases of the respiratory system among—	
	All occupied males.	Occupations with exposure to organic dust.	All occupied males.	Occupations with exposure to organic dust.	All occupied males.	Occupations with exposure to organic dust.
15 to 19 years	2.44	2.39	0.54	0.72	0.24	0.21
20 to 24 years	4.41	4.59	1.55	2.29	.48	.44
25 to 34 years	6.01	5.80	2.08	2.53	.77	.59
35 to 44 years	10.22	9.32	2.74	3.44	1.66	1.46
45 to 54 years	17.73	17.08	3.04	3.60	3.82	3.61
55 to 64 years	31.01	30.05	2.16	2.38	6.54	6.11
65 years and over	83.39	83.50	1.11	1.45	17.77	17.62

The recorded industrial insurance mortality statistics are available for thirteen specific occupations, included in this group, returning in the aggregate 7,523 deaths from all causes. Of this number 1,732, or 23.0 per cent, were from consumption. The deaths from respiratory diseases other than consumption numbered 1,050, or 14.0 per cent. The expected consumption mortality, on the basis of the mortality among males in the registration area of the United States for the seven-year period 1900 to 1906, was 14.8 per cent, and from respiratory diseases other than consumption 11.7 per cent. When the mortality from consumption and from other respiratory diseases is combined, the proportionate number of deaths among males in occupations with exposure to general organic dust is shown to be 37.0 per cent against 26.5 per cent expected.

PROPORTIONATE MORTALITY FROM CONSUMPTION IN OCCUPATIONS EXPOSED TO ORGANIC DUST, 1897 TO 1906, COMPARED WITH THAT OF ALL MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[Figures for occupations exposed to organic dust from experience of an industrial insurance company; figures for males in registration area computed from mortality statistics of the United States census.]

Age at death.	Deaths in occupations exposed to organic dust, 1897 to 1906, due to—		Per cent of deaths due to consumption among—	
	All causes.	Consumption.	Occupations exposed to organic dust.	Males in registration area, 1900 to 1906.
15 to 24 years	680	273	40.1	27.8
25 to 34 years	1,060	519	49.0	31.8
35 to 44 years	1,191	421	35.3	23.6
45 to 54 years	1,257	271	21.6	15.0
55 to 64 years	1,502	165	11.0	8.1
65 years and over	1,833	83	4.5	2.7
Total	7,523	[a] 1,732	23.0	[b] 14.8

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[a] There were also 1,050 deaths from other diseases of the respiratory system, or 14.0 per cent of the deaths from all causes.

[b] The per cent of deaths from other diseases of the respiratory system in the registration area was 11.7.

It is evident from the foregoing observations and statistical data relating to a representative number of employments with exposure to general organic dust that the health-injurious effects of such exposure are revealed in a general death rate, which, if not higher, is at least not decidedly lower than the general death rate for all occupied males, and also in a high proportionate mortality from consumption and other respiratory diseases, particularly at the more advanced periods of life. The statistics also indicate that general organic dust is less serious in its fatal effects than mineral or metallic dust, and as a result, the proportionate mortality from consumption and other respiratory diseases in this group of occupations is more favorable than in the group of occupations with exposure to mineral and metallic dusts.

The tabular analysis of the mortality of persons employed in occupations with exposure to organic dust indicates that the effects of such dust exposure are less serious than the corresponding effects of exposure to metallic and mineral dusts, but the consequences to health and life are sufficiently serious to demand most careful attention to the whole problem of dust prevention and removal at the point of origin, in conformity to modern methods of factory sanitation. Although the statistical evidence is more or less conflicting, and this is to be expected on account of the variations in the conditions of life and industrial methods in the different countries for which the data are available, on the whole the American mortality statistics, including industrial insurance experience, are confirmed by the official vital statistics of England and Wales and of Switzerland. All the employments included in this inquiry are occupations indispensable to human welfare and daily needs, and the ample protection of health and life in these industries is, therefore, a matter of humanitarian obligation on the part of the employer, as well as a question of self-interest on the part of the employee.

APPENDIX.

TABLE I.—NUMBER OF MALES EMPLOYED IN VARIOUS OCCUPATIONS IN THE UNITED STATES, 1900, BY AGE GROUPS.

[Computed from report on Occupations, Twelfth Census of the United States, 1900.]

Occupation.	Number of male employees in each age group.						
	15 years and over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Draymen, hackmen, and teamsters	532,637	141,671	164,052	117,865	67,923	30,349	10,777
Total—Occupations with exposure to municipal dust	532,637	141,671	164,052	117,865	67,923	30,349	10,777
Millers	40,182	4,996	9,721	9,886	7,671	4,856	3,050
Bakers	74,263	19,567	23,446	16,876	8,424	4,137	1,813
Confectioners	21,745	5,946	6,338	4,634	2,750	1,410	667
Tobacco and cigar factory operatives	84,821	27,032	24,078	18,152	9,840	4,160	1,559
Leather curriers and tanners	40,402	9,966	11,668	9,528	5,540	2,520	1,180
Harness and saddle makers	39,316	6,813	9,651	8,564	6,824	4,644	2,820
Glove makers	4,416	1,571	1,169	789	503	284	100
Boot and shoe makers	167,015	37,796	37,763	32,777	25,504	19,028	14,147
Total—Occupations with exposure to organic dust	472,160	113,687	123,884	101,206	67,056	41,041	25,396
All occupied males—Continental United States	22,802,545	5,933,720	5,993,847	4,704,682	3,250,259	1,856,181	1,063,856

TABLE II.—PER CENT OF MALES EMPLOYED IN EACH AGE GROUP IN VARIOUS OCCUPATIONS IN THE UNITED STATES, 1900.

[Computed from report on Occupations, Twelfth Census of the United States, 1900.]

Occupation.	Per cent of male employees in each age group.						
	15 years and over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Draymen, hackmen, and teamsters	100.0	26.6	30.8	22.1	12.8	5.7	2.0
Total—Occupations with exposure to municipal dust	100.0	26.6	30.8	22.1	12.8	5.7	2.0
Millers	100.0	12.4	24.2	24.6	19.1	12.1	7.6
Bakers	100.0	26.4	31.6	22.7	11.3	5.6	2.4
Confectioners	100.0	27.3	29.2	21.3	12.6	6.5	3.1
Tobacco and cigar factory operatives	100.0	31.9	28.4	21.4	11.6	4.9	1.8
Leather curriers and tanners	100.0	24.7	28.9	23.6	13.7	6.2	2.9
Harness and saddle makers	100.0	17.3	24.5	21.8	17.4	11.8	7.2
Glove makers	100.0	35.6	26.5	17.9	11.4	6.4	2.2
Boot and shoe makers	100.0	22.6	22.6	19.6	15.3	11.4	8.5
Total—Occupations with exposure to organic dust	100.0	24.1	26.2	21.4	14.2	8.7	5.4
All occupied males—Continental United States	100.0	26.0	26.3	20.6	14.3	8.1	4.7

TABLE III.—NUMBER OF DEATHS IN VARIOUS OCCUPATIONS IN THE REGISTRATION STATES OF THE UNITED STATES, 1900, BY AGE GROUPS.

[From report on Vital Statistics, Twelfth Census of the United States, 1900.]

Occupation.	Number of deaths due to—					
	All causes in each age group.				Consumption at ages 15 years and over.	Other respiratory diseases at ages 15 years and over.
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years and over.		
Draymen, hackmen, and teamsters......	217	1,005	548	269	485	316
Total—Occupations with exposure to municipal dust...........	217	1,005	548	269	486	316
Millers...................................	3	29	34	95	12	25
Bakers and confectioners................	41	170	166	105	98	61
Cigar makers and tobacco workers......	34	198	172	79	122	80
Leather makers..........................	13	67	72	54	52	31
Leather workers.........................	8	39	88	81	28	20
Boot and shoe makers....................	62	158	247	447	131	116
Total—Occupations with exposure to organic dust.............	161	661	779	861	443	333

TABLE IV.—DEATH RATE PER 1,000 IN VARIOUS OCCUPATIONS IN THE REGISTRATION STATES OF THE UNITED STATES, 1900, BY AGE GROUPS.

[From report on Vital Statistics, Twelfth Census of the United States, 1900.]

Occupation.	Death rate per 1,000 due to—					
	All causes in each age group.				Consumption at ages 15 years and over.	Other respiratory diseases at ages 15 years and over.
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years and over.		
Draymen, hackmen, and teamsters......	4.7	9.9	16.7	75.3	2.6	1.7
Total—Occupations with exposure to municipal dust...........	4.7	9.9	16.7	75.3	2.6	1.7
Millers...................................	5.8	10.5	15.6	164.9	2.0	4.1
Bakers and confectioners................	4.5	7.9	23.4	105.8	2.5	1.6
Cigar makers and tobacco workers......	5.9	14.6	31.0	120.6	4.8	3.2
Leather makers..........................	3.5	7.8	19.7	94.2	3.1	1.9
Leather workers.........................	3.4	7.5	23.7	94.6	2.3	1.6
Boot and shoe makers....................	2.7	3.4	11.2	77.9	1.4	1.2
Total—Occupations with exposure to organic dust.............	3.6	6.7	17.6	91.7	2.3	1.7
All occupied males, registration states ..	5.1	8.8	19.9	98.4	2.4	2.0

TABLE V.—NUMBER OF DEATHS FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER RESPIRATORY DISEASES AMONG OCCUPIED MALES IN RHODE ISLAND, COMPARED, 1897 TO 1906.

[From reports of the Rhode Island state board of health.]

Occupation.	Number of deaths due to—				Per cent of deaths due to—		
	All causes.	Consumption.	Other respiratory diseases.	Consumption and other respiratory diseases.	Consumption.	Other respiratory diseases.	Consumption and other respiratory diseases.
Drivers and teamsters	531	131	77	208	24.7	14.5	39.2
Total—Occupations with exposure to municipal dust	531	131	77	208	24.7	14.5	39.2
Millers	14	2	2	4	14.3	14.3	28.6
Bakers	86	15	10	25	17.4	11.6	29.0
Confectioners	24	4	6	10	16.7	25.0	41.7
Cigar makers	25	5	1	6	20.0	4.0	24.0
Tanners and curriers	23	2	1	3	8.7	4.3	13.0
Harness and saddle makers	42	6	5	11	14.3	11.9	26.2
Shoemakers	177	20	18	38	11.3	10.2	21.5
Total—Occupations with exposure to organic dust	391	54	43	97	13.8	11.0	24.8
All occupied males—State of Rhode Island	19,314	3,429	2,420	5,849	17.8	12.5	30.3

TABLE VI.—NUMBER OF DEATHS FROM ALL CAUSES, FROM CONSUMPTION, AND FROM OTHER RESPIRATORY DISEASES AMONG OCCUPIED MALES IN RHODE ISLAND, COMPARED, 1852 TO 1906.

[From reports of the Rhode Island state board of health.]

Occupation.	Number of deaths due to—				Per cent of deaths due to—		
	All causes.	Consumption.	Other respiratory diseases.	Consumption and other respiratory diseases.	Consumption.	Other respiratory diseases.	Consumption and other respiratory diseases.
Teamsters	972	230	112	342	23.7	11.5	35.2
Total—Occupations with exposure to municipal dust	972	230	112	342	23.7	11.5	35.2
Millers	54	10	7	17	18.5	13.0	31.5
Bakers	221	44	19	63	19.9	8.6	28.5
Confectioners	62	15	10	25	24.2	16.1	40.3
Cigar makers	115	46	10	56	40.0	8.7	48.7
Tanners and curriers	66	6	5	11	9.1	7.6	16.7
Harness and saddle makers	158	39	20	59	25.5	13.1	38.6
Shoemakers	716	138	64	202	19.3	8.9	28.2
Total—Occupations with exposure to organic dust	1,387	298	135	433	21.5	9.7	31.2
All occupied males in Rhode Island	55,834	11,645	6,904	18,549	20.8	12.4	33.2

TABLE VII.—YEARS OF LIFE LIVED BY OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES DURING THE YEARS 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Years of life lived by males in each age group during 1900 to 1902.[a]						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	117,135	142,287	232,860	152,604	92,523	43,335	14,253
Coachmen, cabmen, and omnibus service	74,754	92,688	177,330	137,301	88,551	43,599	15,297
Total—Occupations with exposure to municipal dust	191,889	234,975	410,190	289,905	181,074	86,934	29,550
Millers	7,083	8,496	16,347	14,553	10,665	6,825	3,675
Bakers, confectioners	51,735	49,218	78,903	54,450	33,645	19,653	8,844
Tobacco workers	6,885	6,798	13,008	10,776	7,614	4,431	2,064
Tanners	3,582	3,975	7,050	5,550	4,314	2,559	1,185
Curriers	9,744	9,930	18,198	13,302	9,597	6,180	2,286
Saddlers, harness makers	11,025	10,218	18,252	14,331	10,962	7,602	3,321
Shoemakers	77,043	76,101	136,935	103,839	77,217	61,776	40,899
Total—Occupations with exposure to organic dust	167,097	164,736	288,693	216,801	154,014	109,026	62,274

[a] The years of life as used in this table means three times the number of occupied males enumerated at the census of 1901.

TABLE VIII.—MORTALITY DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Deaths due to all causes in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	328	611	1,562	1,998	1,889	1,580	1,537
Coachmen, cabmen, and omnibus service	141	325	1,130	1,717	1,838	1,519	1,470
Total—Occupations with exposure to municipal dust	469	936	2,692	3,715	3,727	3,099	3,007
Millers	8	25	59	131	184	220	361
Bakers, confectioners	117	187	417	473	542	610	669
Tobacco workers	19	40	88	100	131	128	140
Tanners	9	13	27	32	65	79	106
Curriers	23	52	104	124	175	216	224
Saddlers, harness makers	20	48	111	140	185	223	300
Shoemakers	204	391	867	1,020	1,341	1,800	3,400
Total—Occupations with exposure to organic dust	400	756	1,673	2,020	2,623	3,276	5,200

TABLE IX.—MORTALITY DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Deaths due to consumption in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	57	149	416	444	275	84	21
Coachmen, cabmen, and omnibus service	35	113	393	492	350	120	15
Total—Occupations with exposure to municipal dust	92	262	809	936	625	204	36
Miller	1	7	14	35	23	14	8
Bakers, confectioners	18	73	144	131	93	37	9
Tobacco workers	3	21	46	37	23	9	1
Tanners	4	5	8	5	18	6	....
Curriers	9	22	36	47	31	18	5
Saddlers, harness makers	7	29	47	50	39	17	2
Shoemakers	78	221	435	440	328	159	65
Total—Occupations with exposure to organic dust	120	378	730	745	555	260	90

TABLE X.—MORTALITY DUE TO OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Deaths due to other diseases of the respiratory system in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	30	81	267	411	411	409	364
Coachmen, cabmen, and omnibus service	13	34	146	271	331	330	336
Total—Occupations with exposure to municipal dust	43	115	413	682	742	739	700
Millers	1	4	12	30	44	59	109
Bakers, confectioners	15	18	44	82	100	126	138
Tobacco workers	2	4	9	24	27	23	36
Tanners	2	6	3	9	11	22	19
Curriers	2	4	15	19	36	53	38
Saddlers, harness makers	2	3	9	17	22	41	48
Shoemakers	11	35	77	135	216	342	709
Total—Occupations with exposure to organic dust	35	74	169	316	456	666	1,097

TABLE XI.—DEATH RATE PER 1,000 DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Death rate per 1,000 from all causes in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	2.30	4.29	6.71	13.09	20.42	36.46	107.84
Coachmen, cabmen, and omnibus service	1.89	3.51	6.37	12.51	20.76	34.84	96.10
Total—Occupations with exposure to municipal dust	2.44	3.98	6.56	12.81	20.58	35.65	101.76
Millers	1.18	2.94	3.61	9.00	17.25	32.23	98.23
Bakers, confectioners	2.26	3.80	5.28	8.69	16.11	31.04	75.64
Tobacco workers	2.76	5.88	6.76	9.28	17.21	28.89	67.83
Tanners	2.51	3.27	3.88	5.77	15.07	30.87	89.45
Curriers	2.36	5.24	5.71	9.32	18.23	34.96	97.99
Saddlers, harness makers	1.81	4.70	6.08	9.77	16.88	29.33	90.33
Shoemakers	2.65	5.14	6.33	9.82	17.37	29.14	83.13
Total—Occupations with exposure to organic dust	2.39	4.59	5.30	9.32	17.03	30.05	83.50
All occupied males—England and Wales	2.44	4.41	6.01	10.22	17.73	31.01	88.89

TABLE XII.—DEATH RATE PER 1,000 DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Death rate per 1,000 due to consumption in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	0.49	1.05	1.79	2.91	2.97	1.94	1.47
Coachmen, cabmen, and omnibus service	.47	1.22	2.22	3.58	3.95	2.75	.98
Total—Occupations with exposure to municipal dust	.48	1.12	1.97	3.23	3.45	2.35	1.22
Millers	.14	.82	.86	2.41	2.16	2.05	2.18
Bakers, confectioners	.35	1.48	1.83	2.41	2.76	1.88	1.02
Tobacco workers	.44	3.09	3.54	3.43	3.68	2.08	.48
Tanners	1.12	1.26	1.13	.90	4.17	2.34	....
Curriers	.92	2.22	1.98	3.53	3.23	2.91	2.19
Saddlers, harness makers	.63	2.84	2.58	3.49	3.56	2.24	.60
Shoemakers	1.01	2.90	3.18	4.24	4.18	2.57	1.59
Total—Occupations with exposure to organic dust	.72	2.29	2.53	3.44	3.60	2.38	1.45
All occupied males—England and Wales	.54	1.55	2.08	2.74	3.04	2.16	1.11

TABLE XIII.—DEATH RATE PER 1,000 DUE TO OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN ENGLAND AND WALES, 1900 TO 1902, BY AGE GROUPS.

[From Part II, Supplement to the Sixty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales.]

Occupation.	Death rate per 1,000 due to other diseases of the respiratory system in each age group.						
	15 to 19 years.	20 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Carmen, carriers	0.26	0.57	1.15	2.69	4.44	9.44	25.54
Coachmen, cabmen, and omnibus service	.17	.37	.82	1.97	3.74	7.57	21.97
Total—Occupations with exposure to municipal dust	.22	.49	1.01	2.35	4.10	8.50	23.69
Millers	.14	.47	.73	2.06	4.13	8.64	29.66
Bakers, confectioners	.29	.37	.56	1.51	2.97	6.41	15.60
Tobacco workers	.29	.59	.69	2.23	3.55	5.19	17.44
Tanners	.56	1.51	.43	1.62	2.55	8.60	16.03
Curriers	.21	.40	.82	1.43	3.75	8.58	16.62
Saddlers, harness makers	.18	.29	.49	1.19	2.01	5.39	14.45
Shoemakers	.14	.46	.56	1.30	2.80	5.54	17.34
Total—Occupations with exposure to organic dust	.21	.45	.59	1.46	2.96	6.11	17.62
All occupied males—England and Wales	.24	.48	.77	1.66	3.32	6.54	17.77

TABLE XIV.—YEARS OF LIFE LIVED BY OCCUPIED MALES IN CERTAIN OCCUPATIONS IN SCOTLAND DURING THE YEARS 1900 TO 1902, BY AGE GROUPS.

[From Supplement to the Forty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in Scotland.]

Occupation.	Years of life lived by males in each age group during 1900 to 1902.(a)			
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years and over.
Carters, carriers, van men	35,235	55,743	21,111	2,559
Total—Occupations with exposure to municipal dust	35,235	55,743	21,111	2,559
Millers	1,722	3,816	2,646	702
Bakers, confectioners	22,509	26,595	10,866	1,452
Skinners, tanners, curriers	2,547	4,698	2,688	417
Saddlers, harness makers	2,214	2,604	1,464	273
Boot and shoe makers	9,966	20,364	16,557	4,668
Total—Occupations with exposure to organic dust	38,958	58,377	34,221	7,512

[a] The years of life used in this table means three times the number of occupied males enumerated at the census of 1901.

TABLE XV.—MORTALITY DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN SCOTLAND, 1900 TO 1902, BY AGE GROUPS.

[From Supplement to the Forty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in Scotland.]

Occupation.	Deaths due to all causes in each age group.			
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years and over.
Carters, carriers, van men	188	496	631	449
Total—Occupations with exposure to municipal dust	188	496	631	449
Millers	6	22	80	110
Bakers, confectioners	81	215	349	241
Skinners, tanners, curriers	8	34	67	67
Saddlers, harness makers	11	21	40	38
Boot and shoe makers	66	218	540	681
Total—Occupations with exposure to organic dust	172	510	1,076	1,137

TABLE XVI.—DEATH RATE PER 1,000 DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN SCOTLAND, 1900 TO 1902, BY AGE GROUPS.

[From Supplement to the Forty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in Scotland.]

Occupation.	Death rate per 1,000 due to all causes in each age group.			
	15 to 24 years.	25 to 44 years.	45 to 64 years.	65 years and over.
Carters, carriers, van men	5.34	8.90	29.89	175.46
Total—Occupations with exposure to municipal dust	5.34	8.90	29.89	175.46
Millers	3.48	5.77	30.23	156.70
Bakers, confectioners	3.60	7.99	32.12	165.98
Skinners, tanners, curriers	3.14	7.24	24.93	160.67
Saddlers, harness makers	4.97	8.06	27.32	139.19
Boot and shoe makers	6.62	10.71	32.61	145.89
Total—Occupations with exposure to organic dust	4.42	8.74	31.44	151.36
All occupied males—Scotland	....	9.32	26.32	....

TABLE XVII.—NUMBER AND PER CENT OF DEATHS DUE TO CONSUMPTION AND TO OTHER DISEASES OF THE RESPIRATORY SYSTEM IN CERTAIN OCCUPATIONS IN SCOTLAND, 1900 TO 1902, AGES 25 TO 64 YEARS.

[From Supplement to the Forty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in Scotland.]

Occupation.	Deaths due to consumption and to other diseases of the respiratory system.									
	Number due to—					Per cent of deaths due to—				
	Consumption.	Bronchitis.	Pneumonia.	Other respiratory diseases.	Consumption and respiratory diseases.	Consumption.	Bronchitis.	Pneumonia.	Other respiratory diseases.	Consumption and respiratory diseases.
Carters, carriers, van men	158	82	159	15	414	14.0	7.3	14.1	1.3	36.7
Total—Occupations with exposure to municipal dust	158	82	159	15	414	14.0	7.3	14.1	1.3	36.7
Millers	11	13	9	2	35	10.8	12.7	8.8	2.0	34.3
Bakers, confectioners	104	45	62	8	219	18.4	8.0	11.0	1.4	38.8
Skinners, tanners, curriers	23	10	10	1	44	22.8	9.9	9.9	1.0	43.6
Saddlers, harness makers	10	1	5	1	17	16.4	1.6	8.2	1.6	27.9
Boot and shoe makers	146	60	75	2	283	19.3	7.9	9.9	.3	37.3
Total—Occupations with exposure to organic dust	294	129	161	14	598	18.5	8.1	10.2	.9	37.7

TABLE XVIII.—DEATH RATE PER 1,000 DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN SWITZERLAND, 1879 TO 1890, BY AGE GROUPS.

[From Vital Statistics of Switzerland, 1871 to 1890, Part III.]

Occupation.	Death rate per 1,000 due to consumption in each age group.						
	15 to 19 years.	20 to 29 years.	30 to 39 years.	40 to 49 years.	50 to 59 years.	60 to 69 years.	70 years and over.
Street, waterworks, and sewer employees.	1.10	1.99	2.78	3.39	2.88	2.92	1.60
Millers	1.23	1.42	3.02	5.18	6.49	5.47	7.11
Bakers	1.30	2.75	4.72	3.96	4.75	5.92	7.61
Confectioners	2.34	6.19	6.36	3.58	6.00	9.38	13.51
Tobacco workers and cigar makers	.33	2.00	3.35	4.22	4.01	3.55	....
Saddlers	2.10	4.24	6.77	3.61	6.83	10.01	4.38
Shoemakers	1.41	3.52	3.95	4.10	5.35	5.19	4.22
All occupied males—Switzerland	1.30	3.04	3.66	3.65	3.52	3.25	1.34

TABLE XIX.—DEATHS DUE TO ALL CAUSES AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN THE UNITED STATES, 1897 TO 1906, BY AGE GROUPS.

[From experience of an industrial insurance company.]

Occupation.	Deaths due to all causes in each age group.						
	15 years and over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Street cleaners	180	....	18	37	47	45	33
Cabmen, coachmen, and hackmen	651	39	136	154	149	105	68
Drivers, truckmen	3,850	336	1,024	974	660	468	338
Total—Occupations with exposure to municipal dust	4,681	425	1,178	1,165	856	618	439
Grain handlers and elevator men	24	1	7	5	7	2	2
Millers	256	7	8	27	39	64	111
Bakers	1,357	112	201	259	248	250	287
Confectioners	306	51	52	62	39	56	46
Cigar makers and packers	1,580	131	267	281	325	284	242
Tobacco workers	141	28	31	26	21	21	14
Tobacco and cigar dealers	196	14	34	35	29	40	44
Tanners, beamers, and curriers	478	41	44	66	81	100	146
Harness makers and saddlers	510	34	44	60	86	131	155
Leather workers	641	92	154	155	99	79	62
Glove cutters and makers	27	6	2	4	7	2	6
Boot and shoe makers	1,930	139	185	179	252	467	708
Button makers	127	24	31	32	24	6	10
Total—Occupations with exposure to organic dust	7,523	680	1,060	1,191	1,257	1,502	1,833

TABLE XX.—DEATHS DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN THE UNITED STATES, 1897 TO 1906, BY AGE GROUPS.

[From experience of an industrial insurance company.]

Occupation.	Deaths due to consumption in each age group.						
	15 years and over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Street cleaners	33	....	8	13	7	3	2
Cabmen, coachmen, and hackmen	163	19	58	52	22	11	1
Drivers, truckmen	999	126	400	313	118	35	12
Total—Occupations with exposure to municipal dust	1,195	145	466	378	142	49	15
Grain handlers and elevator men	5	....	1	2	1	....	1
Millers	40	2	7	8	11	9	3
Bakers	277	43	86	75	43	23	7
Confectioners	68	13	22	19	5	6	3
Cigar makers and packers	442	57	147	119	67	36	16
Tobacco workers	49	10	15	11	8	4	1
Tobacco and cigar dealers	48	5	15	12	4	4	8
Tanners, beamers, and curriers	89	21	19	18	16	7	8
Harness makers and saddlers	89	15	21	20	20	11	2
Leather workers	206	35	77	55	29	9	1
Glove cutters and makers	5	2	....	1	....	1	1
Boot and shoe makers	371	58	93	69	61	54	36
Button makers	48	12	16	12	6	1	1
Total—Occupations with exposure to organic dust	1,732	273	519	421	271	165	83

TABLE XXI.—PER CENT OF DEATHS DUE TO CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN THE UNITED STATES, 1897 TO 1906, BY AGE GROUPS.

[From experience of an industrial insurance company.]

Occupation.	Per cent of deaths due to consumption in each age group.						
	15 years and over.	15 to 24 years.	25 to 34 years.	35 to 44 years.	45 to 54 years.	55 to 64 years.	65 years and over.
Street cleaners	18.3	....	44.4	35.1	14.9	6.7	6.1
Cabmen, coachmen, and hackmen	25.0	48.7	42.6	38.8	14.8	10.5	1.5
Drivers, truckmen	25.9	32.6	39.1	32.1	17.1	7.5	3.6
Total—Occupations with exposure to municipal dust	25.5	34.1	39.6	32.4	16.6	7.9	3.4
Grain handlers and elevator men	20.8	....	14.3	40.0	14.3	....	50.0
Millers	15.6	28.6	37.5	29.6	28.2	14.1	2.7
Bakers	20.4	33.4	42.8	29.0	17.3	9.2	2.4
Confectioners	22.2	25.5	42.3	30.6	12.8	10.7	6.5
Cigar makers and packers	28.9	43.5	56.1	42.3	20.6	12.7	6.6
Tobacco workers	34.8	35.7	48.4	42.3	38.1	19.0	7.1
Tobacco and cigar dealers	21.9	35.7	44.1	34.3	13.8	10.0	6.8
Tanners, beamers, and curriers	18.6	51.2	43.2	27.3	19.8	7.0	5.5
Harness makers and saddlers	17.5	44.1	47.7	33.3	23.3	8.4	1.3
Leather workers	32.1	38.0	50.0	35.5	29.3	11.4	1.6
Glove cutters and makers	13.5	33.3	....	25.0	....	50.0	16.7
Boot and shoe makers	19.2	41.7	50.3	38.5	24.2	11.6	5.1
Button makers	37.8	50.0	51.6	37.5	25.0	16.7	10.0
Total—Occupations with exposure to organic dust	23.0	40.1	49.0	35.3	21.6	11.0	4.5

TABLE XXII.—NUMBER AND PER CENT OF DEATHS DUE TO DISEASES OF THE RESPIRATORY SYSTEM OTHER THAN CONSUMPTION AMONG OCCUPIED MALES IN CERTAIN OCCUPATIONS IN THE UNITED STATES, 1897 TO 1906.

[From experience of an industrial insurance company.]

Occupation.	Deaths due to respiratory diseases other than consumption.									
	Number due to—					Per cent of deaths due to—				
	All respiratory diseases other than consumption.	Asthma.	Bronchitis.	Pneumonia.	Other respiratory diseases.	All respiratory diseases other than consumption.	Asthma.	Bronchitis.	Pneumonia.	Other respiratory diseases.
Street cleaners....	33	3	5	23	2	18.3	1.6	2.8	12.8	1.1
Coachmen, cabmen, and hackmen............	122	6	10	94	12	18.6	.9	1.5	14.4	1.8
Drivers, truckmen.	632	27	56	483	66	16.4	.7	1.5	12.5	1.7
Total—Occupations with exposure to municipal dust.	787	36	71	600	80	16.8	.8	1.5	12.8	1.7
Grain handlers and elevator men.	1	....	....	1	....	4.2	....	....	4.2	....
Millers............	41	7	4	29	1	16.0	2.7	1.6	11.3	.4
Bakers............	185	17	23	124	21	13.6	1.3	1.7	9.1	1.5
Confectioners......	54	3	4	40	7	17.7	1.0	1.3	13.1	2.3
Cigarmakers and packers..........	180	16	22	118	24	11.6	1.0	1.4	7.7	1.5
Tobacco workers...	14	3	3	7	1	9.9	2.1	2.1	5.0	.7
Tobacco and cigar dealers...........	37	6	7	23	1	18.9	3.1	3.6	11.7	.5
Tanners, beamers, and curriers.....	91	5	9	65	12	19.0	1.0	1.9	13.6	2.5
Harnessmakers and saddlers.....	61	4	9	41	7	11.9	.7	1.8	8.0	1.4
Leather workers...	89	6	11	62	10	13.9	.9	1.7	9.7	1.6
Glove cutters and makers..........	5	....	2	3	....	18.5	....	7.4	11.1	....
Boot and shoe makers..........	278	30	41	173	34	14.4	1.6	2.1	9.0	1.8
Buttonmakers.....	14	1	....	11	2	11.0	.8	....	8.6	1.6
Total—Occupations with exposure to organic dust..	1,050	98	135	697	120	14.0	1.3	1.8	9.3	1.6

TABLE XXIII.—DEATHS DUE TO ALL CAUSES, TO CONSUMPTION, AND TO OTHER DISEASES OF THE RESPIRATORY SYSTEM AMONG MALES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1906, BY AGE GROUPS.

[From reports on mortality, Bureau of the Census.]

Age at death.	Deaths due to all causes.	Deaths due to consumption.		Deaths due to other diseases of the respiratory system.	
		Number.	Per cent of deaths from consumption.	Number.	Per cent of deaths from other respiratory diseases.
15 to 24 years................................	134,700	37,495	27.8	13,010	9.7
25 to 34 years................................	186,580	58,424	31.3	20,298	10.9
35 to 44 years................................	205,930	48,500	23.6	25,655	12.5
45 to 54 years................................	205,497	30,781	15.0	25,869	12.6
55 to 64 years................................	218,151	17,707	8.1	26,575	12.2
65 years and over.............................	435,228	11,949	2.7	50,603	11.6
Total................................	1,386,086	204,856	14.8	162,010	11.7

RECENT REPORTS OF STATE BUREAUS OF LABOR STATISTICS.

MAINE.

Twenty-second Annual Report of the Bureau of Industrial and Labor Statistics for the State of Maine, 1908. Thomas J. Lyons, Commissioner. xiv, 459 pp.

The following subjects are presented in this report: Women and children in the textile industry, 83 pages; rural conditions in Maine, 215 pages; employers' liability, 40 pages; shorter workday for women and children, 16 pages; directory of labor organizations, 25 pages; farm crops in Maine, 13 pages; constitutional amendment, 5 pages; factories, mills, and shops built during 1908, 4 pages; strikes and labor difficulties, 33 pages; report of the inspector of factories, workshops, mines, and quarries, 11 pages.

Women and Children in the Textile Industry.—Under this title are given the results of an investigation into the conditions surrounding the employment of women and children in the mills of Lewiston, Auburn, Biddeford, and Saco. The work of the women and children is described in detail, and mention is made of the various agencies existing for the improvement of conditions.

Employers' Liability.—In this section is given a history of the legislation enacted in this and other countries upon the subject of the liability of employers for injuries occurring to their employees and the text of legislation proposed for enactment in the State of Maine.

Shorter Workday for Women and Children.—Reasons are given under this head for the restriction of the hours of women and children. Reference is made to earlier legislation, and the decisions of the courts are given in regard to its constitutionality.

Factories, Mills, and Shops Built.—Returns show that in 1908, in 86 towns, 95 buildings were erected or enlarged, remodeled, etc., at a total cost of $1,448,500. These improvements provided for 3,518 additional employees. A summary of improvements of this character is presented for each of the ten years, 1899 to 1908.

NUMBER AND AGGREGATE COST OF FACTORIES, MILLS, AND SHOPS BUILT OR ENLARGED, ETC., AND ADDITIONAL EMPLOYEES, BY YEARS, 1899 TO 1908.

Year.	Number of towns.	Number of buildings.	Aggregate cost.	New employees.
1899	108	188	$6,800,700	4,990
1900	114	167	2,174,825	5,539
1901	94	121	5,638,200	6,337
1902	91	129	2,776,980	5,017
1903	96	124	1,436,900	3,343
1904	91	113	1,175,500	3,276
1905	98	114	2,308,410	3,829
1906	104	131	2,637,500	3,674
1907	95	183	4,140,960	3,566
1908	86	95	1,448,500	3,518

Strikes and Labor Difficulties.—Under this head are given accounts, arranged by towns, of the minor labor difficulties occurring during the year 1908. Separate accounts are given of the more serious strikes in the paper and wood pulp industry.

Child Labor.—In the report on factory inspection a table is presented, in which it is shown that the number of children working under certificates in certain manufacturing establishments of the State was 1,111 in 1907 and 1,357 in 1908.

MARYLAND.

Seventeenth Annual Report of the Bureau of Statistics and Information of Maryland, 1908. Charles J. Fox, Chief. 532 pp.

The following are the subjects presented in this report: The State of Maryland, its industries and resources, 178 pages; child labor, 52 pages; factory inspection, 88 pages; free employment agency, 8 pages; prices of grain, 2 pages; cost of living, 8 pages; strikes and lockouts, 8 pages; in labor circles, 12 pages; special investigation, 4 pages; new incorporations, 23 pages; immigration, 7 pages; proceedings of the twenty-fourth annual convention of officials of bureaus of labor statistics, 9 pages; financial statement, 1 page; gazetteer, 109 pages.

Child Labor.—In this chapter is given the results of the enforcement of the child-labor law during the year 1908. To children between 12 and 16 years of age 5,913 labor permits were issued—3,426 to boys and 2,487 to girls. Of this total, 142 labor permits were issued to colored boys and 43 to colored girls. In Baltimore city the labor permits issued numbered 5,177—2,977 to boys and 2,200 to girls, of which 127 were to colored boys and 38 to colored girls. Applications for permits to the number of 704 were refused. The arrests made during 1908 for the violation of the law numbered 9.

A summary of the work of the various district inspectors shows that there were employed in the manufacturing establishments and factories of various kinds inspected in Baltimore city 2,030 males and

1,895 females under 16 years of age. In wholesale and retail stores and in offices there were employed 1,348 males and 526 females under 16 years of age. The average wages for the whole city for children engaged in the manufacturing industries was $3.64 per week, and for children employed in stores, offices, etc., $3.11 per week.

Free Employment Agency.—During 1908, the year covered by this report, there were 425 applications for positions, 378 by males and 47 by females. Of the applicants, 77 were laborers, 46 were clerks, 34 were farm hands, and the remainder were distributed among 73 other occupations. Applications for help numbered 64, of which 33 were for male help and 31 for female help. There were 29 positions filled, 24 by males and 5 by females. As to character of positions filled, 21 were farm hands and 4 were cooks.

Cost of Living.—Under this title is given a table showing the average monthly retail prices of the principal articles of food and fuel in 1908, compiled from prices quoted in the daily papers of Baltimore. In conjunction with this there are presented for 536 persons engaged in 22 different occupations, in 1908, hours worked and earnings per day, days worked during the year, and average yearly earnings. For persons engaged in a part of the occupations the average yearly earnings for 1908 are placed in comparison with those for 1907, 1906, and 1905.

Strikes and Lockouts.—There are given for the year 1908 statistics of 16 strikes, which threw out of employment 2,521 persons (2,024 males and 497 females), with an estimated wage loss of $41,424. Of the 16 strikes 4 were ordered by organizations and 12 were not; 5 were for increase of wages, 5 were for change in system of work, 2 were against reduction of wages, and 4 were for other causes; 8 strikes were successful, 2 were partly successful, and 6 were unsuccessful. So far as could be ascertained, the sum of $1,420 was expended in assisting those on strike. No lockouts were reported for the year.

In Labor Circles.—Under this caption is presented the returns for 1908 from 50 labor organizations, having a reported membership of 7,271. A list of the unions reporting is given, with name of each organization, name and address of secretary, membership, hours of labor per day, and minimum rate of wages. The lowest reported union wage was $1.17 per day for bindery women, while the highest was $5 per day for bricklayers. Of the total unions, 25 reported the hours of labor as 8 per day, 2 as 8½ per day, 12 as 9 per day, 4 as 10 per day, 3 reported hours from 10 to 13 per day, and 4 made no report.

Unemployment.—As a result of a special investigation, it was found that in the month of September, 1908, but 36,824 persons were employed in 261 mills and factories in the State. When working full time the same mills employed a total of 56,061 persons. It was thus shown that 34 per cent of the usual force was out of employment at that time. The rate of wages paid and the cost of living were found to be practically the same as in the previous year.

Immigration.—For the year ending December 31, 1908, 8,472 aliens, exclusive of transits, were admitted at the port of Baltimore. Of this number only 1,330 were destined to Maryland.

MICHIGAN.

Twenty-sixth Annual Report of the Bureau of Labor and Industrial Statistics, including the Sixteenth Annual Report of State Inspection of Factories, 1909. Richard H. Fletcher, Commissioner. 415 pp.

This report consists of two sections, the second section (318 pages) being devoted to inspection of factories, stores, hotels, tenement shops, etc. In the first section, which relates to labor and industrial statistics, the following subjects are presented: Labor laws, 31 pages; description of a trip through the copper and iron district of Michigan, 6 pages; manufacture of paper, 3 pages; free employment bureaus, 42 pages; manufacture of beet sugar, 4 pages.

Paper Manufacture.—In the year ending June 30, 1908, there were manufactured in the State 243,951 tons of paper of various grades, valued at $12,972,357. This was the output of 36 plants, representing an invested capital of $9,550,500. The sum of $2,375,658 was paid out in wages to 4,507 employees, of whom 3,766 were males receiving an average of $1.81 per day, and 741 were females receiving an average of $1.09 per day.

Free Employment Bureaus.—Under this title is presented a detailed report of the work done in the five free employment bureaus of the State. The bureau at Jackson was opened during 1908.

The following table summarizes the work done at the Detroit, Grand Rapids, Kalamazoo, and Saginaw bureaus for the year ending November 30, 1908, and at the Jackson bureau for the period August 1 to November 30, 1908:

OPERATIONS OF FREE PUBLIC EMPLOYMENT OFFICES, YEAR ENDING NOVEMBER 30, 1908.

City.	Situations wanted.		Help wanted.		Positions secured.	
	Males.	Females.	Males.	Females.	Males.	Females.
Detroit	5,408	1,837	5,361	2,275	4,951	1,773
Grand Rapids	2,844	2,231	1,511	1,550	1,453	1,490
Jackson	[a] 521	[a] 353	[a] 198	[a] 258	[a] 160	[a] 205
Kalamazoo	4,300	1,412	1,617	973	1,839	666
Saginaw	2,992	632	1,709	777	1,430	526
Total	16,065	6,515	10,396	5,833	9,833	4,660

[a] August 1 to November 30, 1908.

Beet-Sugar Manufacture.—In the beet-sugar industry 16 factories were in operation during the year 1908, the same number as in 1907. These 16 factories represent an aggregate investment of $10,440,000. There were employed in the plants 4,205 persons, at an average daily wage of $2.11. The number of tons of beets grown in 1908 was approximately 612,000.

The Coal Industry.—In this industry there were 33 mines in operation during the year 1908, as compared with 34 mines during the year 1907. A condensed summary of the operations of the mines for the two years is presented in the following table:

COAL MINE STATISTICS, 1907 AND 1908.

Item.	Year.	
	1907.	1908.
Mines in operation	34	33
Average number of employees	2,881	3,087
Average hours worked per day	8	7.8
Average days worked per month	20.4	20.2
Average daily wages	$3.24	$3.02
Tons of coal mined	1,898,426	1,839,927
Average cost of mining per ton	$1.64½	$1.67

In 30 mines 101 accidents were reported—6 fatal, 13 serious, 35 severe, 46 slight, and 1 not reported as to extent of injury.

NEW JERSEY.

Thirty-first Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey for the year ending October 31, 1908. Winton C. Garrison, Chief. xiv, 390 pp.

This report consists of 3 parts, in which the following subjects are presented: Statistics of manufactures, 124 pages; the industrial depression of 1907–8, 72 pages; steam railroads, 12 pages; cost of living, 10 pages; fruit and vegetable canning, 10 pages; industrial chronology, 162 pages.

Statistics of Manufactures.—This presentation of the statistics of manufactures is based on returns for the year 1907 from 2,152 establishments, 2,070 representing 88 specified industries and 82 grouped as unclassified. None of the establishments considered employed fewer than 10 persons or had invested capital of less than $5,000. The facts are set out in ten tables, which show by industries, character of establishment, management (whether corporate or private), amount of capital and various forms in which it is invested, value of stock or materials used and of goods produced, number of wage-earners (men, women, and children under 16 years of age) and wages and earnings, days in operation during the year and hours worked per day and per week, percentage of business done of total productive capacity, and character and measure of power used.

The returns show that of the 2,152 establishments reporting, 1,384 (in 1,381 of which were 75,452 stockholders) were under the corporate form of ownership and management, and 768 (with 1,339 partners and proprietors) were owned and managed by partnerships and private individuals. Capital invested (by 2,149 establishments) showed an aggregate of $629,549,849, value of materials or stock used (by 2,145 establishments) an aggregate of $462,854,716, and value of products or goods made (by 2,142 establishments) an aggregate of $773,186,299. The total paid out in wages amounted to $144,740,069. During the year there was an average of 280,280 wage-earners employed, 209,859 males 16 years of age and over, 64,613 females 16 years of age and over, and 5,808 children under 16 years of age. Under normal conditions the average number of hours worked per day in the 2,152 establishments was 9.60, and the average number of hours worked per week 55.83. The average number of days in operation during the year was 285.92, and the average proportion of business done of total productive capacity was 77.96 per cent.

The table following presents the number and per cent of males and females 16 years of age and over and of children under 16 years of age employed in 1907 in all industries (2,152 establishments) at each specified weekly rate of wages:

NUMBER AND PER CENT OF MALES AND FEMALES 16 YEARS OF AGE AND OVER AND OF CHILDREN UNDER 16 YEARS OF AGE IN ALL INDUSTRIES (2,152 ESTABLISHMENTS), RECEIVING EACH CLASSIFIED WEEKLY RATE OF WAGES, 1907.

Classified weekly wages.	Number.				Per cent.			
	Males 16 years of age and over.	Females 16 years of age and over.	Children under 16 years of age.	Total.	Males 16 years of age and over.	Females 16 years of age and over.	Children under 16 years of age.	Total.
Under $3	1,148	1,430	845	3,423	0.5	2.1	12.8	1.1
$3 and under $4	2,681	4,143	2,744	9,568	1.2	6.0	41.5	3.2
$4 and under $5	5,499	9,312	1,878	16,689	2.5	13.5	28.4	5.6
$5 and under $6	6,995	12,720	796	20,511	3.1	18.5	12.1	6.8
$6 and under $7	8,911	12,315	254	21,480	4.0	17.9	3.9	7.2
$7 and under $8	11,447	9,648	55	21,150	5.1	14.0	.8	7.0
$8 and under $9	15,899	6,623	33	22,555	7.1	9.6	.5	7.5
$9 and under $10	33,351	4,704	....	38,055	14.8	6.8	....	12.7
$10 and under $12	36,505	4,345	....	40,850	16.2	6.3	....	13.6
$12 and under $15	39,440	2,739	....	42,179	17.5	4.0	....	14.0
$15 and under $20	42,321	785	....	43,106	18.8	1.2	....	14.4
$20 and under $25	13,368	82	....	13,450	6.0	.1	....	4.5
$25 and over	7,265	8	....	7,273	3.2	....	....	2.4
Total	224,830	68,854	6,605	300,289	100.0	100.0	100.0	100.0

The following comparative table shows for selected industries, for the years 1906 and 1907, the average number of persons employed per industry and the average yearly earnings per employee:

AVERAGE NUMBER OF EMPLOYEES PER INDUSTRY AND AVERAGE YEARLY EARNINGS PER EMPLOYEE, 1906 AND 1907, BY INDUSTRIES.

Industry.	Average employees per industry.		Average yearly earnings per employee.	
	1906.	1907.	1906.	1907.
Artisans' tools	2,445	2,516	$585.24	$590.55
Boilers, steam	1,996	1,875	629.14	609.64
Brewery products	2,065	2,063	898.31	924.98
Brick and terra cotta	7,419	6,759	469.02	462.26
Chemical products	6,839	7,196	513.49	529.91
Cigars and tobacco	8,376	9,061	294.78	319.22
Drawn wire and wire cloth	1,867	8,116	596.21	582.01
Electrical appliances	6,789	6,853	519.52	558.57
Furnaces, ranges, and heaters	1,915	1,902	686.82	721.08
Glass, window and bottle	6,190	6,624	569.60	587.98
Hats, men's	5,832	5,416	581.53	647.81
Jewelry	8,482	3,435	682.31	654.23
Leather, tanning and finishing	5,722	5,381	617.59	568.75
Lamps, electric and other	2,817	3,281	433.75	429.96
Machinery	24,398	24,959	631.37	636.70
Metal goods	6,751	7,076	450.45	459.27
Oils	3,758	4,074	644.10	684.39
Paper	2,419	2,860	502.27	519.08
Pottery	4,833	4,947	629.95	619.27
Rubber products, hard and soft	6,280	6,448	489.76	503.16
Shipbuilding	8,822	4,927	677.56	696.84
Silk goods, broad and ribbon	21,543	20,055	434.72	478.89
Steel and iron, structural	8,429	3,292	627.34	681.17
Steel and iron, forging	2,882	3,242	649.35	631.18
Woolen and worsted goods	8,965	9,989	385.30	393.19
Twenty-five industries	152,274	161,847	534.42	546.23
Other industries	107,798	118,433	465.76	477.47
All industries	260,072	280,280	505.96	517.24

INDUSTRIAL DEPRESSION.—Returns from 1,114 establishments distributed through 59 industries indicate that owing to the industrial depression late in 1907, 8,630 contracts, involving $8,504,424, were canceled, necessitating the discharge of 40,181 wage-earners, or 23.7 per cent of the usual force.

STEAM RAILROADS.—For the year ending June 30, 1908, the 7 railroads in the State employed 42,514 persons for an average of two hundred and ninety-six days per person, each working an average of 10.4 hours per day. The total paid in wages amounted to $27,940,975, the average wages per day being $2.22 and the average yearly earnings per employee $657.22. Six of the companies reported the number of employees injured during the year as 1,827, the injuries of 116 resulting in death.

COST OF LIVING.—This is a continuation of the presentation of previous years, and shows the retail prices of 50 items of food and 2 other commodities (common soap and kerosene oil) in the principal markets in all counties of the State, in the month of June, 1908.

Comparisons with retail prices in 1907 and in 1898 (the year the investigation was begun) are also given.

Taking the list of commodities together, the prices in 1908, as compared with the prices in 1907, show a decrease of but 2.99 per cent, while taken in comparison with the prices in 1898 they show an increase of 24.08 per cent.

FRUIT AND VEGETABLE CANNING.—In 1907 there were 42 canneries from which returns were received. Invested capital to the amount of $775,996 and wages paid to the amount of $429,442 were reported by the canneries. The 42 canneries gave employment to 4,901 wage-earners—2,078 males and 2,823 females. The selling value of the product amounted to $2,263,361.

INDUSTRIAL CHRONOLOGY.—This record is for the year ending September 30, 1908. During the period there were 50 new buildings erected and equipped for manufacturing purposes and 27 old plants more or less enlarged; 9 manufacturing plants were permanently closed and 53 closed for a period ranging from one to ten months; 86 establishments suffered from fire, the losses amounting to $1,383,889, all but a small part of which was covered by insurance; there were 9 instances in which employees received an increase in wages, and 24 firms reduced the hours of weekly labor; 1,075 wage-earners (279 being railroad employees) were injured while at work, of which number 234 (95 being railroad employees) died from the injuries received; 57 strikes of greater or less duration occurred, 11 being against reduction of wages, 9 for increase of wages, 9 against employment of nonunion men, and the remainder for various other causes. There were 5 new labor unions organized during the chronological period covered.

NORTH DAKOTA.

Tenth Biennial Report of the Commissioner of Agriculture and Labor for the term ending June 30, 1908. W. C. Gilbreath, Commissioner. 101 pp.

This report, which was compiled from the records of the assessors and other county officers, presents statistics on the following subjects: Statistics of agriculture, 40 pages; valuation of property, 16 pages; dairy industry, 4 pages; live stock, 4 pages; orchards and fruit, 2 pages; coal mines, 6 pages; vital statistics, 2 pages; farm labor, 2 pages.

FARM LABOR.—Tables show for each county the number of male and female employees reported in 1906 and 1907, their average monthly wages, and the total amount paid in wages. The lowest average monthly wages reported in any county in 1907 was $13.18

for males and $3 for females; the highest average was $40 for males and $22.67 for females.

Coal Mines.—Returns are given from the coal mines of the State for each year of the period covered. In 1907, 46 mines reported the employment of 310 persons and the production of 303,025 tons of coal.

OREGON.

Third Biennial Report of the Bureau of Labor Statistics and Inspector of Factories and Workshops of the State of Oregon, 1907–8. O. P. Hoff, Commissioner. 200 pp.

This report presents a variety of subjects pertaining directly and indirectly to labor and industrial conditions.

Labor Organizations.—Reports were received from 108 unions, having a total membership of 11,581, giving date of organization, membership of each union, membership fees, monthly dues, strike, sick, and funeral benefits, wages and hours of labor, regulations governing apprenticeship, number of members idle, etc.

Strikes and Lockouts.—Brief accounts are given of 9 strikes and 2 lockouts which occurred in the State during the two years ending September 30, 1908.

Industries.—Reports from manufacturing, agricultural, transportation, and other industries of the State, present capital and output, wages and hours of labor, number of employees, and miscellaneous data.

Accidents.—In the sawmills and factories of the State during the two years ending September 30, 1908, 109 persons were accidentally injured, the injuries of 12 resulting in death.

RHODE ISLAND.

Twenty-first Annual Report of the Commissioner of Industrial Statistics, made to the General Assembly at its January session, 1908. George H. Webb, Commissioner. iv, 1,168 pp.

This report is made up of two parts. In the first, consisting of 1,084 pages, is contained the results of the census of 1905, presenting tables relating to the foreign-born population, church statistics, size of families, ownership of homes, age grouping, political condition, conjugal condition, maternity, color and race, and nativity of parents. In the second part, which covers 84 pages, is presented an account of the strikes and lockouts which occurred during 1907, a directory of labor organizations, and statistics of manufactures for the year 1906.

STRIKES AND LOCKOUTS.—This presentation consists of a chronological arrangement of the strikes which occurred in the State during the year ending December 31, 1907, compiled from records kept by the state labor bureau, from the columns of the public press and from other sources.

MANUFACTURES.—In this section comparative statistics for the years 1905 and 1906 are given for the textile, rubber, and fine metal manufacturing industries, showing number of establishments and character of organization; highest, lowest, and average number of employees; wages; number of employees 16 years of age and over, by sex, and children under 16 years of age; cost of materials used and value of goods made and work done; number and character of machines in operation, etc. The fine metal work embraces jewelry, jewelers' findings, silversmithing and silverware, refining, electroplating, enameling, engraving, diesinking, and lapidary work.

Comparative summary statistics for the years 1905 and 1906 are presented for 9 industries in the table following:

COMPARATIVE STATISTICS FOR 9 SELECTED MANUFACTURING INDUSTRIES, 1905 AND 1906.

Industry.	Year.	Establishments.	Average number of employees.	Total wages paid.	Cost of materials used.	Value of products, including work done.
Cotton goods	1905	50	20,371	$7,255,114	$15,724,947	$26,033,185
	1906	50	20,245	7,854,742	16,550,421	27,112,941
Dyeing and finishing textiles	1905	19	6,950	2,943,233	3,339,502	9,594,704
	1906	19	7,578	3,212,576	4,799,696	11,446,834
Hosiery and knit goods	1905	10	1,486	513,948	2,217,345	3,158,317
	1906	10	1,518	601,973	2,521,273	3,467,230
Silk goods	1905	4	811	292,851	1,007,468	1,581,916
	1906	4	795	339,164	1,578,131	2,478,618
Woolen and worsted goods	1905	50	20,882	9,106,823	41,073,816	57,360,560
	1906	50	21,002	9,643,867	41,907,860	58,543,508
Rubber and elastic goods	1905	4	1,468	584,380	2,498,767	3,882,809
	1906	4	1,593	645,031	2,564,640	4,022,994
Jewelry	1905	50	4,841	2,331,784	4,527,514	9,948,819
	1906	50	4,755	2,763,998	6,103,320	12,063,011
Silversmithing and silverware	1905	6	1,998	1,514,531	2,617,080	6,142,905
	1906	6	2,156	1,601,240	2,856,157	6,483,609
Jewelers' findings	1905	10	465	268,858	1,980,908	2,632,897
	1906	10	509	312,969	2,765,510	3,580,550

A comparison of the data for the two years shows that the total establishments (133) in the 5 textile industries employed 51,138 employees in 1906 and 50,500 in 1905, paid in wages a total of $21,652,322 in 1906 and $20,111,969 in 1905, used materials to the amount of $67,357,381 in 1906 and $63,363,078 in 1905, and manufactured products to the value of $103,049,131 in 1906 and $97,728,682 in 1905.

RECENT FOREIGN STATISTICAL PUBLICATIONS.

CANADA.

Wage-earners, by occupations. Bulletin I, Census and Statistics Office, 1907. xxviii, 105, xxx pp.

This volume presents data for wage-earners as shown by the census of 1901, here presented by occupations for the Dominion. Records of wages were made for each person employed in any industrial or other occupation who was paid wages or other money allowance, whether employed at home or elsewhere.

The schedule called for the occupation, the months employed at trade in factory, months employed at trade at home, months employed in any other occupation, earnings from regular employment, and extra earnings from any other than the chief occupation or trade. Nine principal classes of occupations were made, and the following table shows the number of occupations found to exist in each class for the Dominion of Canada:

NUMBER OF OCCUPATIONS OF WAGE-EARNERS, BY CLASSES.

Classes of occupations.	At regular employment.			At extra employment.		
	Total kinds of occupations.	Occupations employing males.	Occupations employing females.	Total kinds of occupations.	Occupations employing males.	Occupations employing females.
Agricultural	23	22	5	12	12	....
Domestic and personal	42	39	21	28	24	12
Fisheries and fishing	4	4	....	3	3	....
Forestry and lumbering	19	19	....	12	12	....
Manufacturing	1,256	1,135	377	277	261	44
Mining	43	43	....	22	22	....
Miscellaneous	21	21	....	8	8	....
Professional	61	60	25	36	35	10
Trade and transportation	152	151	59	108	107	13
Total	1,621	1,494	487	506	484	79

As will be seen, the total number of occupations enumerated is 1,621 for those classed as regular employments, besides 506 given under the heading of extra employments. Of occupations in the first group, 487 employ females, and in the second 79 employ females. The greatest variety of employments is to be found in the manufacturing class and the least in that of fisheries and fishing. In four of the nine principal classes no females are employed. The competition of female labor is not so keenly felt in Canada as in many other countries. It varies considerably also in the different Provinces of the Dominion. For Canada, as a whole it is found that females are employed in 30 per cent of the occupations and males in 92 per cent.

The table below shows the percentage of occupations giving employment to each sex in the Provinces of the Dominion:

PERCENTAGE OF OCCUPATIONS EMPLOYING EACH SEX, IN THE VARIOUS PROVINCES.

Provinces.	Per cent of occupations employing—	
	Males.	Females.
British Columbia	95.00	12.70
Manitoba	96.00	21.00
New Brunswick	94.64	23.00
Nova Scotia	95.20	19.21
Ontario	93.10	30.15
Prince Edward Island	87.72	19.29
Quebec	93.74	33.14
The Territories	88.00	16.30

As to actual numbers of wage-earners in Canada, the census disclosed a total of 922,591 persons, of whom 736,549 were males and 186,042 were females. Full records were not available for all of these, so that the totals of the tables are for 661,485 males and 153,445 females. In proportion to the total population, about 40 per cent of the males and 10 per cent of the females are represented in the tables. The ratio of female to male wage-earners is least in the far western Province of British Columbia, where it is as 1 to 16.61, and is greatest in Quebec, where it is as 1 to 3.77. In Manitoba it is as 1 to 4.30, in New Brunswick as 1 to 4.85, in Nova Scotia as 1 to 6, in Ontario as 1 to 3.84, in Prince Edward Island as 1 to 3.90, in the Territories as 1 to 7.10, and for the Dominion the ratio is as 1 to 4.30.

Making the comparison by classes, the ratio of female to male wage-earners is as 1 to 790 in agriculture, 1 to 2.08 in domestic and personal service, 1 to 4.55 in manufacturing, 1 to 1.34 in the professional class, and 1 to 10.41 in trade and transportation.

The number of persons employed at their regular occupations, together with their total and average earnings, is shown by classes and sexes in the following table:

NUMBER AND EARNINGS OF EMPLOYEES AT REGULAR WORK, BY CLASSES OF OCCUPATIONS AND SEX.

Classes of occupations.	Employees.		Total earnings of—		Average earnings of—	
	Males.	Females.	Males.	Females.	Males.	Females.
Agricultural	72,696	92	$15,088,523	$13,453	$207.55	$146.23
Domestic and personal	140,978	67,752	38,411,472	9,285,169	272.46	137.05
Fisheries	7,872	....	1,513,931	....	205.86	....
Forestry and lumbering	16,438	....	5,014,821	....	305.07	....
Manufacturing	226,001	49,662	91,110,433	9,597,784	403.14	193.26
Mining	23,898	....	12,278,110	....	513.77	....
Miscellaneous	523	....	202,745	....	387.65	....
Professional	29,574	22,110	20,018,090	5,731,011	676.88	259.20
Trade and transportation	144,005	13,829	72,466,667	3,296,776	503.22	238.39
Total	661,485	153,445	256,104,792	27,924,198	387.16	181.98

From this table it appears that the largest number of males is employed in the manufacturing, trade and transportation, and domestic and personal classes; while females are found in greatest numbers in the domestic and personal, manufacturing, and professional classes. The average per capita earnings of males are largest in the professional class, followed by mining, trade and transportation, and manufacturing, in the order named, while for females the largest earnings are found in the professional class, trade and transportation coming next. In the professional class are included government and municipal employees, school-teachers, and stenographers and typewriters.

In discussing the subject of extra earnings it is stated that the whole number of persons who procured work at employment outside of their usual occupations was 20,351, of whom 19,399 were males and 952 were females. Not only is the number of females securing extra work quite small, but it is also restricted to four classes of occupations. The total amount earned by extra work by females was but $63,472, or an average of $66.67. For males the total earnings were $2,442,323, or an average of $125.90. The following table shows the total and average amount of extra earnings by classes of occupations for each sex:

NUMBER AND EARNINGS OF EMPLOYEES AT EXTRA WORK, BY CLASSES OF OCCUPATIONS AND SEX.

Classes of occupations.	Employees at extra work.		Earnings at extra work of—		Average earnings of—	
	Males.	Females.	Males.	Females.	Males.	Females.
Agricultural	1,766	....	$144,471	....	$81.81	....
Domestic and personal	2,387	310	224,122	$17,230	93.89	$55.58
Fisheries	1,003	....	101,706	....	101.40	....
Forestry and lumbering	547	....	57,804	....	105.67	....
Manufacturing	7,606	289	876,273	17,858	115.20	61.79
Mining	311	....	68,108	....	219.00	....
Miscellaneous	40	....	5,216	....	130.40	....
Professional	1,757	288	355,124	21,614	202.12	75.05
Trade and transportation	3,982	65	609,499	6,770	153.06	104.15
Total	19,399	952	2,442,323	63,472	125.90	66.67

ITALY.

Inchiesta sul lavoro notturno dei fornai. Ministero di Agricoltura, Industria e Commercio. Ufficio del Lavoro. 1906. viii, 106 pp.

This volume, published by the Italian bureau of labor as a study of night work in Italian bakeries, is divided into two parts, designated as general and special. The first reviews the present condition of the bakery industry, including the conditions of labor, hygienic and social conditions, and the results of agreements between employers and employees and of legislation applicable to employees in bakeries. In this section free use is made of studies and official reports presenting conditions in various foreign countries as well as in Italy. The unprogressive nature of the industry, compared with most others in modern times, is first noted, and the tendency to local monopoly arising from the nature of the product. Prolonged hours of labor and broken periods of repose were found to characterize the employment, conditions which were aggravated by poorly lighted and ventilated workrooms and the practice of the workmen seeking to obtain needed rest by lying on tables, bags, benches, and even on the floor of the workrooms. The last chapter of this section presents data as to trade diseases, copied from various sources.

The second section presents the results of the actual investigation conducted by the bureau itself, the four chapters taking up, respectively, the history of the movement for daytime employment in Italian bakeries; the schedule of inquiry and the results obtained in the matter of hours of labor, time of beginning and ending the day's work, the employment of shifts, power used, sanitation, equipment, etc.; the schedule of inquiry and the answers as to the possibility of reducing the amount of night work, and the schedule and replies on the results obtained by substituting day for night work.

From the account given of the movement to secure the reduction of night work, or the substitution, as far as possible, of day work, it appears that the subject was first brought prominently to notice at the general meeting of bakery employees in 1883, though little was done until after the meeting of the next year, when a vigorous campaign accompanied by strikes was begun. These efforts were unsuccessful, and other matters pressed to the front, so that this subject was dropped for some years. It was again taken up in 1901, though a few unsuccessful experiments were tried in various localities during the intervening years.

Day labor was found to be employed in a number of localities, in part by reason of agreements between employers and employees, and in part as the result of municipal regulations. These gains were encouraging, but failed of reaching the end aimed at by the federation of bakery employees, and in 1904 a petition was submitted to the bureau of labor asking that a study of the question be made with a view to the entire abolition of night work in the manufacture of bakery products, and it is as a result of this united effort that the present investigation was undertaken.

The first schedule of inquiry sought to disclose the general conditions prevalent in the bakeries, and was sent to each of the 62 leagues or unions of bakery employees then in existence in the country. Repeated efforts secured replies from but 42 unions, covering 555 establishments with 2,247 employees. As the census of 1901 reported 45,093 employees in bakeries and similar employment, the returns are clearly far short of complete, and are in some instances incorrect. However, the report is thought to be fairly representative of the conditions existing throughout the Kingdom.

Of the 555 establishments for which data were obtained, 72, with 405 employees, made use of machinery for the kneading of the dough, the number of employees in each ranging from 2 to 50, the average being 5.63 per establishment, as compared with an average of 4.05 in all establishments reported.

The following table shows the hour of beginning work in the bakeries reported on in this respect, and the number of employees affected:

NUMBER OF BAKERIES BEGINNING WORK AT SPECIFIED HOURS AND NUMBER OF EMPLOYEES AFFECTED.

Hour of beginning work.	Number of establishments.	Number of employees.	Hour of beginning work.	Number of establishments.	Number of employees.
5 p. m	18	88	3 a. m	3	11
5.30 p. m.	5	20	4 a. m	3	11
6 p. m	26	128	4.30 a. m	1	4
6.30 p. m	4	27	5 a. m	9	50
7 p. m	50	187	6 a. m	23	91
7.30 p. m	7	21	6.30 a. m	1	8
8 p. m	52	210	7 a. m	1	4
8.30 p. m	6	16	7.30 a. m	3	13
9 p. m	67	188	8 a. m	2	7
10 p. m	62	194	11 a. m	3	13
10.30 p. m	4	12	12 noon	1	8
11 p. m	40	138	1 p m	19	53
11.30 p. m	1	3	2 p. m	8	36
12 midnight	48	138	3 p. m	10	37
1 a. m	7	22	4 p. m	10	44
1.30 a. m	2	5	4.30 p. m	2	9
2 a. m	18	42			

An examination of the above table shows that night work is the rule and employment by day the exception, since, of the 511 establishments reported, 415, having 79 per cent of the employees, begin work from 5 p. m. to 3 a. m., inclusive, while the number beginning work so as to exclude night work mainly or entirely, i. e., from 5 a. m. to 12 m., is but 43, with but 189 employees, or 10 per cent of the total number under consideration.

To discover the length of the working day, three forms of inquiry were adopted—one as to the hours of beginning and ending work, one as to the daily period of rest, and the third as to the hours of effective labor. In the great majority of cases the answers to the second and third inquiries were not satisfactorily given. From the answers to the first, the following table is obtained:

NUMBER OF BAKERIES REQUIRING SPECIFIED HOURS OF WORK, AND NUMBER OF EMPLOYEES AFFECTED.

Hours of work.	Number of establishments.	Number of employees.	Hours of work.	Number of establishments.	Number of employees.
5	1	2	14	68	275
6	3	4	14½	3	15
7	9	22	15	26	96
8	17	56	15½	2	8
8½	1	1	16	26	118
9	37	83	16½	5	22
9½	3	7	17	12	53
10	63	199	17½	2	13
10½	2	6	18	8	32
11	61	213	19	16	32
11½	7	23	19½	1	4
12	131	480	20	3	9
12½	9	83	21	17	48
13	51	154	22	1	4
13½	5	16			

Employment in bakeries is pointed out as differing from other employments, which generally have a definite time for beginning work, continuing without interruption to a definite quitting time, with established intervals of rest. Bakery employees have frequent short intervals of rest between the various operations, but not generally of any important length or of fixed recurrence; and even in those rare instances where periods of two or three hours of rest are allowed, the workman must remain subject to call, and would much prefer continuous employment and a complete release thereafter. In many shops the practice was observed of locking the employees in during the entire period of the working day. The figures given above, therefore, while they somewhat exceed the actual hours of effective employment, show the period during which the employee is subject to orders. No explanation is given of the fact that the total number of establishments shown is 590, or 35 in excess of the number stated to have been reported on in the first schedule.

Seventy-one establishments observe a shorter day than ten hours; 426 work from ten to fifteen hours, inclusive, and 93 work in excess of fifteen hours. Fifty-five per cent of the number of employees shown in the above table work from ten to thirteen hours; 16.5 per cent are detained for sixteen hours or more, while but 8.6 per cent work less than ten hours. The evil effects of the long hours of employment and of confinement within the work places were found to be aggravated by the hygienic conditions, of which it was said that they could not possibly be worse.

The inquiry as to the practicability of substituting day for night work elicited radically different replies. Of the 288 employers or managers expressing an opinion, 110 were unconditionally favorable, 28 were partially favorable, 72 were classed as partially opposed, and 78 as absolutely opposed. Of the establishments from which these expressions were obtained, 258 were under the ordinary proprietary form, 26 were cooperative, and 4 were managed by the municipality. Of the first class, 91 were favorable to day labor and 78 opposed, the remaining 89 being classed as of qualified or intermediate opinion. Of the cooperative class, 17 were favorable, none opposed, and 9 gave qualified opinions; while of the last group, 2 were favorable, none opposed, and 2 of a qualified opinion.

The objections offered began with the legal one that a law regulating hours of labor would interfere with the freedom of contract and the liberty of individuals; to which the employees replied that the court of cassation had upheld the constitutionality of such a regulative law, and that it was not a question of the acts of the employer as an individual, but of his conduct toward others. Other objections were based on the public needs, the organization of the industry, and the expense attendant on producing the necessary output in the restricted period proposed. The replies were that the question was one merely of custom, and data were offered to show the incorrectness of the statement as to the necessity of increasing the number of plants and of employees.

The third schedule sought to disclose the results of the change made in a number of establishments where day work was already in use at the time of the investigation. There were 106 of these from which reports were secured, 4 being classed as large, 21 as medium, and 81 as small establishments; 98 were under ordinary proprietorship, 7 were cooperative, and 1 was a communal plant. The replies were entirely favorable in 34 instances, 2 being from large establishments, 3 from those of medium size, and 29 from small plants; 24 partially favorable replies were made, 1 by a large establishment, 4 from those of medium size, and 19 from small ones; while unfavorable reports were made by 44 establishments, of which 1 was large, 14 medium, and 29 small. As to proprietorship, of those reporting favorably 28 were under the usual form, 5 were cooperative, and 1 communal; while of those partially favorable 22 were ordinary and 2 cooperative. All the 44 unfavorable replies were from bakeries under the ordinary forms of proprietorship.

Effects involving loss or inconvenience were reported by 102 establishments, 8 stating that they were required to make changes in their ovens, increase the number, etc.; 5 had to alter and enlarge their workrooms; 10 required more workmen; 1 introduced a kneading machine; 5 lost part of their trade; 3 reduced production; 1 lost retailers; 1 ceased to send bread to the homes of its customers; and 2 lost incidental work, as of cooking for patrons, etc.

The public made considerable complaint when the changes were introduced, but much of this ceased when experience and adjustment had operated to remove some of the grounds for objection. It can not be said as yet, however, that the change is one that is generally approved by the consumer, but the most serious objections have been met, and fresh bread of the accustomed quality is found to be as easily obtainable as under the old régime, and in only one instance was an increase in cost reported.

The industrial condition of the employees is felt to be generally improved, the hours of labor being reduced by the elimination of periods of inactivity that were found to be incident to night work, and because they are excused from the work of distribution. Their moral and social condition also is said to have improved by reason of the change. No changes in earnings are reported. The master bakers were for the most part dissatisfied with the change, but none is reported to have given up his business, and they, like the consuming public, have found that many of the difficulties first met with are capable of being overcome; and at a meeting in 1906 of proprietors of bakeries representing the whole of Italy, a majority were found to be in favor of an inquiry into the whole subject of the change of working time, on the grounds of the humanitarian objects to be gained thereby.

Abolizione del lavoro notturno nell' industria della panificazione. Legge 22 Marzo, 1908, n. 105, e relazioni parlamentari al disegno di legge presentato dal Ministro di Agricoltura, Industria e Commercio. Supplemento al Bolletino dell' Ufficio del Lavoro. 1908. 86 pp.

This pamphlet, issued by the ministry of agriculture, industry, and commerce, presents the law of March 22, 1908, passed by the Italian Parliament for the abolition of night work in bakeries and pastry shops.

As a result of the agitation described in the inquiry into the subject of night work in bakeries as presented in a foregoing digest (*Inchiesta sul lavoro notturno del fornai*), the law was drafted by the ministry and was adopted practically in the form in which it was presented to the Parliament. The body of the present report is made up of hearings held by Parliament through its permanent committee on labor for the purpose of ascertaining more fully the attitude of those interested, and their reasons for and against the proposed law. Not only the subject of hours of daily labor, but also those of holidays and hygienic conditions were discussed at these hearings.

The law itself restricts labor in the production of bread and pastry to the hours between 4 a. m. and 9 p. m., except that on Saturday labor may be protracted to 11 p. m. This limitation applies to all operations of the preparation of leaven, the heating of the ovens, kneading, and the making and baking of bread and pastry. Under exceptional conditions of the industry and locality and in the manufacture of particular qualities of bread a communal council may grant modifications as to the time for beginning work not in excess of two hours during the months of June, July, August, and September. Appeals may be taken from the decision of the communal council to the minister of agriculture, industry, and commerce, pending which any order of the council shall be suspended.

Transitory conditions of labor or the occurrence of festivals may be considered by the communal council as reasons for brief suspensions of the operation of the law for a period not exceeding one week. Enforcement of the law is committed to the inspectors of industry and labor and to the communal officers of hygiene, with the cooperation of the local police.

NEW SOUTH WALES.

First Annual Report of the Director of Labor, State Labor Bureau of New South Wales, for the year ending June 30, 1906. State Labor Bureau, 1906, 61 pp.

This report is the first annual report of the director of labor for New South Wales, the office having been created to succeed that of labor commissioner. The work of the labor bureau was practically that of undertaking to meet the needs of the unemployed classes of New South Wales. The report, therefore, is made up principally of an account of the various means used by the government through this agency for the administration of relief and the furnishing of employment. The various lines of activity included a free registry office at the capital, with 43 branch offices at principal points throughout the country. These registers were open to men wanting work, whatever their capacities, and to employers who would indicate in their registration the class of labor they desired. No fees were charged either party. The bureau issued railway and steamer fares on credit, repayments to be made by the person benefited after a lapse of a month or more, according to circumstances. These payments were usually guaranteed by the employer or some other responsible person, though this was not a uniform requirement. Members of the family, furniture, farm animals, etc., were also sometimes forwarded by means of advances made by the bureau.

The catching of rabbits, both for their skins and for their meat, is an important industry of New South Wales, and considerable numbers of men find employment in this way, and the bureau has found it a profitable line of assistance to furnish traps, tents, blankets, and other necessary equipment for men going out as "rabbiters." In past years miners' equipments had been furnished as a means of assistance, though this has been less common of late.

Various farms, located at different points, have been maintained for the employment of destitute men, where they could hire out as laborers for a moderate return, and where anyone may receive at least food and lodging in return for a limited amount of service. These farms are also found useful in giving a measure of practical training to men, who are thereby qualified to take places as farm laborers. This latter feature is made a special part of the work at one of the farms, where boys are trained for some weeks, after which they are sent to a more general place of employment and further trained until ready to go on farms as general laborers. The demand for boys so trained is in excess of the supply. The bureau is also an information office concerning labor conditions in all centers of population in the State.

One of the results which the bureau claims to have attained by its activities is the practical elimination of the occupation of "leaders of the unemployed," since unemployment is, in effect, rendered unnecessary by the variety of opportunities offered through the various activities of the bureau. This result was favored by an improvement in the industrial condition of the country, which is mainly agricultural, though the year covered by the report was a profitable one for mining as well. The report of the general register of applicants for work shows 1,241 new registrations during the year, with 361 remaining over from the previous year. Of these, 814 were single men or widowers without dependents, while 788 were married men or widowers with dependent children. A special trades-union register was maintained at one point, but was very little used, only 16 registrations having been made. Registration has been maintained by the government under practically the present system since 1900, and the following table shows the number of reregistrations, new registrations, and total for the year, for a period of six years.

REGISTRATION OF APPLICANTS FOR EMPLOYMENT AT THE STATE LABOR BUREAU, NEW SOUTH WALES, 1900 TO 1906.

Year.	Reregistrations.	New registrations.	Net registrations for the year.
1900-1901	6,343	3,099	9,442
1901-2	1,391	2,243	3,634
1902-3	740	2,114	2,854
1903-4	2,513	1,482	3,995
1904-5	885	998	1,883
1905-6	861	1,257	1,618
Total	12,233	11,193	23,426

An examination of this table shows that there has been in general a decrease in the number of men who designated themselves as unemployed and called on the government to find them work. A report of the classes of work to which men were sent during the year for which this report was made shows that 494 went to government work, 1,228 to private work, 1,870 to labor depots, and 377 to the casual labor farm, or a total of 3,969 persons sent to work.

Men desirous of being kept on the register as eligibles for work are required to report themselves once each month. It is found that large numbers of men register a single time and are never seen or heard of again; thus in 1902–3 of 16,000 men on the books nearly three-fourths of the whole number had dropped out of sight for a term of more than twelve months, so that the registration figures are not reliable as showing the number of persons actually desiring employment. A reregistration was attempted to secure the elimination of useless names, more than 7,000 persons coming in under this new registration. It is estimated that probably two-thirds of these were not really to be fairly considered as "live" registrations. A fairer test of the number of persons desiring employment at any given time is the number actually enrolling during the month; thus on the 31st of July, 1905, 929 persons were believed to be actually eligible for work. This number fell to 257 registering during November, while the winter months increased the enrollment, which was for December 771, for January 735, and for February 719, after which the enrollment fell off to the end of the fiscal year.

The report is taken up in considerable measure with the discussion of the details of the methods used by the bureau itself and the experience of investigators and of the official agencies of various countries. Detailed reports are furnished by each of the local agents as to the opportunities in their various localities, including rates of wages and the classes of employment which are available. There are also presented in appendixes details as to the locations and kinds of work to which men were sent and the trades and occupations represented by those registered for employment.

ROUMANIA.

Progresele Economice ale României indeplinite sub Domnia M. S. Regelui Carol I, 1866–1906. Tablouri Figurative şi Notiţe explicative de Dr. L. Colescu. Şeful Serviciului Statisticei Generale. 1907. 109 pp.

The object of this publication by the chief of the general statistical office of Roumania is to present a review of the moral, intellectual, and material development of the Kingdom during the reign of Charles I. Text, statistical tables, and graphic representations are used to show the economic and other changes that occurred during the four decades of the period covered, the principal subjects presented being agriculture, manufactures, fisheries, commerce, and the production of petroleum. Banking, the postal service (including telegraphs and telephones), and the national finances are also discussed.

With an area of 130,177 square kilometers (50,261 square miles) the population at the census of 1899 was 5,956,690, and was estimated at 6,600,000 in 1906, a growth of approximately 60 per cent since 1866.

The country enjoys a vigorous birth rate, sometimes exceeding 40 per 1,000, the average for the five years preceding the publication of the report being 39.4 per 1,000. The death rate is also high, ranging from 24 to 27 per 1,000, the average for five years being 25.4. The urban population is given at 19 per cent of the total, leaving 81 per cent to be classed as rural. The population of the largest city, Bucharest, is approximately 300,000, the next in size being about one-fourth as large. The country's growth is favored by a fact in respect of which it differs from most of its neighbors in that its immigration exceeds its emigration, though no accurate statistics on the subject have been collected.

The country is preeminently agricultural, this interest, as well as commerce, having largely increased during the period under consideration.

An investigation conducted in 1901–2 disclosed the existence of 62,188 industrial establishments, of which 625 were classed as belonging to the large industries, 54,405 to the average and small industries, and 6,923 to special small industries, besides 235 establishments representing the so-called extractive industries. The number of employees was given as 170,000, of whom 40,000 were engaged in the large industries.

The largest single group of establishments (30 per cent of the total) was engaged in the manufacture, etc., of clothing; woodworking, furniture, the metal-working industries, and the preparation of food products followed in the order named. Of the large establishments, the largest group is that of mills for the grinding of grain. Of the 247,000,000 francs ($47,671,000) of capital invested in the large industries, 111,000,000 francs ($21,423,000) were invested in factories for the preparation of food products (including breweries and distilleries), 31,000,000 francs ($5,983,000) in the chemical industries, and 29,000,000 francs ($5,597,000) in the metal-working industries. In 502 important establishments 961 motors were in use, developing 45,211 horsepower.

The value of raw material required in the large industries averages 121,000,000 francs ($23,353,000) per annum, and the average annual production amounts to 231,000,000 francs ($44,583,000). Of this last amount, 131,000,000 francs ($25,283,000), or 56 per cent, belongs to the class, food products; 23,000,000 francs ($4,439,000), or 9 per cent, to the chemical industries and 17,000,000 francs ($3,281,000), or 7 per cent, to the metal-working industries.

The 19,000 establishments engaged in the manufacture of clothing employ in excess of 40,000 persons; 12,000 small woodworking shops have 15,000 employees, and 10,000 in which metal working is carried on employ approximately the same number.

An important industry is that of the production of petroleum. This has made a rapid growth of late years, the ratio of progress for each decade, starting from 100 as a basis in 1866, being 255 in 1876, 396 in 1886, 1,278 in 1896, and 8,400 in 1905. The actual production in 1866 is given as 5,370 metric tons of 2,204 pounds, and in 1905–6 as 682,000 metric tons. Twenty-two large refineries are reported, representing an invested capital of 24,500,000 francs ($4,728,500) and employing 1,045 workmen.

DECISIONS OF COURTS AFFECTING LABOR.

[Except in cases of special interest, the decisions here presented are restricted to those rendered by the federal courts and the higher courts of the States and Territories. Only material portions of such decisions are reproduced, introductory and explanatory matter being given in the words of the editor.]

DECISIONS UNDER STATUTE LAW.

EMPLOYERS' LIABILITY—EMPLOYMENT OF CHILDREN—VIOLATION OF STATUTE—CONTRIBUTORY NEGLIGENCE—COURSE OF EMPLOYMENT—*Smith's Administrator v. National Coal and Iron Company, Court of Appeals of Kentucky, 117 Southwestern Reporter, page 280.*—This case was before the court of appeals of Kentucky on an appeal from the circuit court of Bell County. The plaintiff sued as administrator of a boy, Bentley Smith, who lost his life while in the employment of the company above named. The boy being under 14 years of age, his employment was in violation of the state law prohibiting the employment of any child less than 14 years of age in any workshop, factory, or mine in the State. A short time before his death the boy went with his father, who was a miner in the regular employment of the company, for the purpose of working in the mine. The foreman asked the boy's age, and on being told that he was not 14, refused to permit the boy to work in the mine. The father was injured soon afterwards so that he was unable to work, whereupon the boy proposed that he should take his father's place, which the father forbade; but the boy went and was put to work by the foreman, who showed him how to shovel and told him how to run under the coal. The boy went to work and was credited with his earnings, which were applied to the rent of the house which his father occupied. After less than three weeks of his employment young Bentley was leaving the mine at noon, riding, as was the usual custom, on the loaded cars of coal. While attempting to pass from one car to another he fell between the two and was run over and killed.

The court below instructed the jury to find for the defendant company, apparently on the idea that the death of the child was due to his own act in walking over the cars. It was further insisted that this was a proper instruction on the ground that he was not then engaged in work for his employer and that his injury was due to his own want of care.

The decision of the court below was reversed on grounds which appear in the opinion of the court of appeals, as delivered by Judge Hobson, which is, in part, as follows:

The boy was serving the master in the mine. He had been getting out coal all the morning. It was necessary that he should leave the mine at noon when the shots were fired. In leaving the mine he was in the regular course of his duty, and it was customary for all the miners to ride out on the cars or to ride in on them. The statute which forbids the employment of children in mines is for their protection. It was a violation of the statute for the child to be employed in the mine. The evidence was plainly sufficient to show that he was employed; and, as he was injured in the mine while going from his place of work to the shaft, it can not be said that he was not injured in the course of his employment in the mine. The statute made it unlawful for him to be employed in the mine, and whether he was injured while at his work in the mine, or in going to his work or coming from his work, is immaterial. It has been held by this court in several cases that, where a statute prohibits a thing for the benefit of a person, he may maintain an action to recover damages sustained by reason of the violation of the statute. [Cases cited.]

We see no reason why this principle should not be applied to infants who are injured when employed in violation of the statute, for manifestly the purpose of the statute is to protect infants from the dangers attending the forbidden employments, which by reason of their youth they would not fully appreciate. While there is some conflict in the authorities, the weight of authority seems in favor of the rule that the breach of the statute is actionable negligence whenever it is shown that the injuries were sustained in consequence of the employment. (Queen *v.* Dayton Coal Co., 95 Tenn. 458, 32 S. W. 460; Rolin *v.* Reynolds Tobacco Co., 141 N. C. 300, 53 S. E. 891; American Car Co. *v.* Armentraut, 214 Ill. 509, 73 N. E. 766, [etc.].)

This is an action to recover for the death of the intestate. No cause of action existed at common law to recover for death, and an action to recover for the death of a person can only be maintained in this State by virtue of section 6, Ky. St., enacted pursuant to section 241 of the constitution. It is well settled that contributory negligence may be pleaded as a defense to an action brought under this section. (Passamaneck *v.* Louisville, etc., R. R. Co., 98 Ky. 195, 32 S. W. 620; Clark *v.* L. & N. R. R. Co., 101 Ky. 34, 39 S. W. 840.) As the action can only be maintained under the statute referred to, and as contributory negligence may be pleaded as a defense to an action under the statute, it necessarily follows that contributory negligence may be relied on by the defendant in bar of the plaintiff's action. A child under 14 years of age is only required to exercise such care as may be reasonably expected of a child of his age under like circumstances. The law takes into consideration that children lack the discretion of grown persons, and that a child under 14 years of age may reasonably be expected to do things which an older person would not do. Whether the intestate used ordinary care in passing over the cars as he did is a question for the jury. (Ornamental Iron, etc., Co. *v.* Green, 108 Tenn. 161, 65 S. W. 39.) Of course, as we have not the proof of the defendant before us, we now only pass upon the case as presented by the proof for the plaintiff. On the proof for the plaintiff the court should have refused to give a peremptory instruction to the jury to find for the defendant.

Judgment reversed, and cause remanded for a new trial, and further proceedings consistent herewith.

EMPLOYERS' LIABILITY—"RAILROAD HAZARDS"—CONSTRUCTION OF STATUTES—*American Car and Foundry Co. v. Inzer, Supreme Court of Indiana, 87 Northeastern Reporter, page 722.*—Mary Inzer had recovered damages for the death of John A. Inzer, caused, as was alleged, by the negligence of the above-named company, in whose employment he was. The company builds cars, and Inzer was a tinner employed in roofing a car when the car on which he was working was moved by a locomotive of the railway passing through the company's plant, by which movement Inzer was killed. The circuit court of Clark County awarded damages to the plaintiff on the ground that the employment was connected with the hazardous business of railroading, which view was affirmed by the appellate court, 86 N. E. 444. (See Bulletin 81, p. 415.) The case was appealed to the supreme court of the State, which reversed the decision of the court below, on the ground that the section of the law relied on (Burns' Ann. Stat. 1901, sec. 7083, ed. of 1908, sec. 8017) does not cover employment of this nature.

The opinion of the supreme court was delivered by Judge Monks, and is, in part, as follows:

It appears from each paragraph of the amended complaint that appellant was a corporation engaged in the manufacture of cars at its plant in Clark County, and then and there maintained a building, where cars were constructed, and "that in said building there was a railroad track which was laid lengthwise in said building, and which extended through the same and outside and through the yard of said defendant upon which said plant was then and there located and connected with the track of the Baltimore & Southwestern Railroad Company." Said Inzer was in the employ of appellant as a tinner, and by his contract required to work on the roof of the cars being constructed by appellant.

In Bedford Quarries Co. *v.* Bough, 168 Ind. 671, 80 N. E. 529, this court on March 1, 1907, held the employers' liability act of 1893, being sections 8017–8020, Burns' Ann. St. 1908 (sections 7083–7087, Burns' Ann. St. 1901), while constitutional as to railroads, was unconstitutional as to private corporations. This was upon the ground that the act imposed burdens upon private corporations not placed upon individuals or partnerships engaged in a similar business under like circumstances and conditions; that said classification had no reasonable basis, because made to depend upon the character of the employer, and not upon the character of the employment. In Pittsburgh, etc., R. Co. *v.* Lightheiser, 168 Ind. 438, 78 N. E. 1033, this court, following the cases therein cited, held that said act put railroads in a class by themselves, that said classification was proper on account of the dangerous and hazardous character of the business of operating railroads, that such classification was not based upon the difference in employers, but upon the difference in the nature of the employment, and that the same was constitutional as to railroads. It was also held in said case, which was decided October 31, 1906, that said act regulates the liability of railroads regardless of whether they are operated by persons, companies, or corporations; in other words, it includes any person, company, or corporation engaged in operating a railroad in this State. (See, also, Indianapolis, etc., Co. *v.* Kinney, 85 N. E. 954, and cases cited.)

There are no facts alleged in either paragraph of the amended complaint showing that appellant was engaged in the operation of a railroad at the time the deceased received the injuries which caused his death. The fact that there were tracks in appellant's yard and buildings on which the cars were constructed and moved by a locomotive engine from place to place thereon for convenience or other purpose in the construction and storage of said cars, and that the same connected with the tracks of a railroad company, did not make the same a railroad or railway; nor was such use thereof by appellant the operation of a railroad within the meaning of said liability act. In the cases cited by appellee to sustain her contention as to the sufficiency of the amended complaint, the defendants were engaged in the operating of railroads for the transportation of freight in the conduct of their private business. Whether such cases are applicable to the law in controversy here we need not decide, for the reason that no such state of facts is shown by the amended complaint. It is proper to say that this case was tried and final judgment rendered by the court below before Bedford Quarries Co. *v.* Bough, supra, and Pittsburg, etc., R. Co. *v.* Lightheiser, supra, were decided by this court.

Judgment reversed, with instructions to sustain the demurrer to the amended complaint.

EXAMINATION AND LICENSING OF BARBERS—CONSTITUTIONALITY OF STATUTE—DELEGATION OF POWERS—EQUAL PROTECTION OF LAWS—*State v. Armeno, Supreme Court of Rhode Island, 72 Atlantic Reporter, page 216.*—This case involved the constitutionality of chapter 1100 of the Public Laws of 1903, which requires a practicing barber to secure a certificate of registration, and also authorizes any member of the board of examiners to enter any barber shop of the State for purposes of inspection. Grievances may be appealed to the supreme court, but no provision is made for trial by jury. The law declares insanitary barber shops to be nuisances, and provides also for a fine of not more than $20. The law applies, as enacted, to cities, but contains a provision that the town council of any town may adopt the provisions of the act and make it applicable to the barber shops of such towns. The defendant, Armeno, raised the question of the constitutionality of this law, and five points were submitted to the supreme court for its determination.

First. Whether or not a search authorized by the law was in violation of the state constitution, which declares the people of the State to be secure in their persons, papers, and possessions against unreasonable searches and seizures.

Secondly. Whether or not the omission of any provision for a trial by jury was constitutional.

Third. Whether or not the two forms of punishment suggested are a violation of the fifth amendment of the Constitution of the United States, which declares that no one shall be twice put in jeopardy for the same offense.

The fourth and fifth inquiries relate to the question of the application of the law, since it is applicable to towns only after adoption by the town council.

The opinion of the court was delivered by Judge Blodgett and sustained the constitutionality of the law on each of these points, on grounds that appear in the following extracts from said opinion:

Article 1, sec. 6, of the constitution of Rhode Island provides: "Sec. 6. The right of the people to be secure in their persons, papers and possessions, against unreasonable searches and seizures, shall not be violated; and no warrant shall issue, but on complaint in writing, upon probable cause, supported by oath or affirmation, and describing as nearly as may be, the place to be searched, and the person or things to be seized."

1. The portion of section 4, c. 1100, p. 28, of the Public Laws, which is claimed to be in contravention of this constitutional provision, is as follows: "Any member of said board shall have power to enter and make reasonable examination of any barber shop in any city in this State during business hours, for the purpose of ascertaining the sanitary condition thereof." As is well stated in the brief for the State, this section of the act in question does not authorize either a search or a seizure. It merely authorizes an examination, which is essentially different from a search. Nothing is authorized to be seized. No authority is given to break open doors, drawers, desks, chests, or anything else. The purpose is merely to empower the board to survey premises at reasonable times so as to know the sanitary conditions of tools, appliances, and furnishings, and to enable it to determine whether or not the law is being properly regarded. Although the conditions upon such an examination should be found to be most unclean and unsanitary, yet the examiner is not authorized to take any summary action, such as seizure of the objectionable tools, appliances, or furnishings, as the case may be; but the examination is made only "for the purpose of ascertaining the sanitary condition thereof" and to enable the board to judge whether or not the law is being obeyed, with the ultimate purpose of revoking the offender's certificate of registration after notice in writing and an opportunity to be heard with appeal to the supreme court, as provided in section 13 of the act as amended by section 1215, Court & Practice Act, 1905.

We therefore answer the first question in the negative.

2. The appeal to the supreme court provided for in section 13 is amended by section 1215, Court & Practice Act 1905, does not deprive the defendant of any constitutional right to a jury trial. The portion of section 13 in question is as follows: "Any person aggrieved by any decision or ruling of said board may, within thirty days, exclusive of Sundays and legal holidays, after receiving notice of said decision, take an appeal therefrom to the supreme court, and said court shall, as soon as may be, hear and determine said appeal." The material part of article 1, sec. 10, of the constitution of Rhode Island, is as follows: " In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial by an impartial jury." Article 1, sec. 15, of the constitution of Rhode Island, is as follows: " The right of trial by jury shall remain inviolate." Section 10, art. 1, of the constitution, has no application because such a decision or ruling of the board is not a criminal prosecution, but is simply a method provided for revoking certificates of registration when the holder thereof has shown himself unfitted to practice the occupation of barber, or has disqualified himself by his failure to post his certificate in a conspicuous place or to renew his certificate and pay the fee required by law. There is no penalty or punishment provided except the forfeiture of his license. A judicial trial, however, is secured to the defendant under this provision, and section 15, art. 1, of the constitution, does not apply to cases of this kind. (See State *v.* Roy, 22 R. I. 538, 48 Atl. 802.)

3. It is a sufficient answer to the third question submitted to say that article 5 of amendments to the Constitution of the United States does not apply to state governments, but only to the Federal Government.

As to the fourth and fifth questions, the court said:

The precise question raised seems to be: Is this law, from the fact that its prohibitions extend only to barbers in cities, a local and special law, and therefore unconstitutional? In Missouri *v.* Lewis, 101 U. S. 22, 25 L. Ed. 989, it was said by Mr. Justice Bradley (page 30 of 101 U. S. [25 L. Ed. 989]): " Each State has the right to make political subdivisions of its territory for municipal purposes, and to regulate their local government. As respects the administration of justice, it may establish one system of courts for cities and another for rural districts, one system for one portion of its territory and another system for another portion. Convenience, if not necessity, often requires this to be done, and it would seriously interfere with the power of a State to regulate its internal affairs to deny to it this right. * * * We might go still further, and say, with undoubted truth, that there is nothing in the Constitution to prevent any State from adopting any system of laws or judicature it sees fit for all or any part of its territory. * * * If every person residing or being in either portion of the State should be accorded the equal protection of the laws prevailing there, he could not justly complain of a violation of the clause referred to, for, as before said, it has respect to persons and classes of persons. It means that no person or class of persons shall be denied the same protection of the laws which is enjoyed by other persons or other classes in the same place and under like circumstances."

Nor is it a valid objection that it is a delegation of legislative power to provide that the law shall apply to a given town only upon a vote of its town council, or that the application of the law in a town shall be left to a vote of the town council and not to the vote of the electors. Thus, in State *v.* Pond, 93 Mo. 606, 6 S. W. 469, in discussing a provision of the local option liquor law of that State which became effective in all incorporated cities or towns having a population of 2,500 or more inhabitants when adopted by a majority vote of the legal voters, the court said (page 622 of 93 Mo., page 472, of 6 S. W.): "While this local option act provides that any county, town, or city of the class named, may, by a majority vote, put such county, town, or city under the operation of the law, it does not refer to them the question of passing a law. That the legislature had already done, and only called upon them to decide by a vote whether they would accept the provisions of a law regularly enacted by both houses of the general assembly and approved by the governor. By its provisions the law, and not the vote, extended its influence over the locality voting against the sale of intoxicants. It was the law that authorized the vote to be taken, and when taken the law, and note the vote, declared the result that should follow the vote. The vote was the means provided to ascertain the will of the people, not as to the passage of the law, but whether intoxicating liquors should be sold in their midst. If the majority voted against the sale, the law, and not the vote, declared it should not be sold. The vote sprang from the law, and not the law from the vote. By their vote the electors declared no consequences, prescribed no penalties, and exercised no legislative function. The law declared the consequences, and, whatever they may be, they are exclusively the result of the legislative will." (Cooley, Const. Lim. (7th Ed.) 173, 174, and cases cited.) Nor need the question be submitted to the electors. It is competent for the legislature to leave the matter to be otherwise determined.

Thus in Commonwealth *v.* Bennett, 108 Mass. 29, the court says: "It is equally within the power of the legislature to authorize a town by vote of the inhabitants, or a city by vote of the city council, to determine whether the sale of particular kinds of liquors within its limits shall be permitted or prohibited."

And it needs no argument to show that the legislature may constitutionally provide for the exercise of the police power in respect to the subject now under consideration in the same manner in which that same police power may lawfully be exercised in respect of the traffic in intoxicating liquors.

We therefore answer the fourth and fifth questions in the negative.

EXAMINATION AND LICENSING OF BARBERS—CONSTITUTIONALITY OF STATUTE—MECHANICAL PURSUITS—*Jackson v. State, Court of Criminal Appeals of Texas, 117 Southwestern Reporter, page 818.*—In this case, W. A. Jackson was convicted of pursuing his trade as a barber without having procured the license required by chapter 141 of the Acts of 1907. Jackson appealed from the decision of the Dallas

County court, and secured a reversal of its judgment, the point in controversy being the constitutionality of the law under which he was convicted. Judge Davidson, who delivered the opinion of the court, took up the two points as to the status of the employment of a barber and the validity of a law of unequal application to different persons in the same employment, in the order named, speaking in part as follows:

> The authorities are somewhat divided as to whether or not the profession or trade of a barber is a mechanical pursuit. In Texas it has been held in Fore et al *v.* Cooper (Tex. Civ. App.) 34 S. W. 341, that the tools, implements, and appurtenances of a barber shop are exempt from execution. This ruling seems to have been followed in Tennessee in the case of Terry *v.* McDaniel, 103 Tenn. 415, 53 S. W. 732, 46 L. R. A. 559. (For some of the decisions of the different courts of the Union, see Terry *v.* McDaniel, supra.) In Louisiana the supreme court held, in State *v.* Hirn, 46 La. Ann. 1443, 16 South. 403, that the pursuit was mechanical, and that the barber was not subject to pay an occupation tax.
>
> If we are right in the contention that appellant's business was a mechanical pursuit, the legislature was powerless to levy a tax upon it, although they might call it a license fee. This license fee does not apply to all barbers alike, even in the same classification, if classification is authorized.
>
> The second proposition relied upon by appellant is that the act is unconstitutional, in that it is discriminating, and not equal and uniform, in that said law exempts from said license fee (1) students of the State University, and other schools of the State, who are or may be making their way through school by serving as barbers; (2) it exempts those who may be serving as barbers in any of the eleemosynary institutions of the State; and (3) it exempts persons following the occupation of barber in towns of 1,000 inhabitants or less; and it is further claimed, in this connection, that the law is void because in the particulars above mentioned it violates section 3 of the Bill of Rights of Texas, in that it grants special privileges to certain individuals and denies such privileges to this defendant; all of whom follow the same occupation. We believe these propositions are well taken, and have been so recently discussed by this court in the cases of Ex parte Woods, 108 S. W. 1171, and Owens *v.* State, 112 S. W. 1075, decided at the Dallas term, 1908, we deem it unnecessary to go into an elucidation of them.
>
> The intention of this act, it would seem, from its caption, is to regulate the practice of barbering, registering and licensing persons to carry on such practice, and to insure better education of the practice, and to insure better sanitary conditions in barber shops, and to prevent the spread of disease in the State of Texas, and declaring an emergency. If the constitution, requiring all taxes to be equal and uniform, provided such a tax or license fee may be levied as provided by this bill, and it would make no difference whether it is a license fee or a tax, so far as these provisions are concerned, then barbers at the University and other schools, in eleemosynary institutions, and in towns of 1,000 inhabitants or less, are not brought within its pro-

visions, and are not subjected to the same penalties, regulations, or control as are those who come within its provisions. But, whatever may have been the thought in the legislative mind as to why these classes or persons should be exempted, in violation of the provisions of the constitution, we are of opinion that such intent can not operate, and we are of opinion that the favored and exempted classes mentioned, especially with reference to the barbers in schools and eleemosynary institutions, can not be exempt, and this law remain constitutional. Sanitary regulations should operate upon all alike, when subject to same conditions.

The law, therefore, is held unconstitutional; and the judgment is reversed, and the prosecution is ordered dismissed.

RAILROADS—SAFETY APPLIANCE ACTS—SUFFICIENT COMPLIANCE—VIOLATIONS—*United States v. Boston and Maine Railroad Company, United States District Court, District of Massachusetts, 168 Federal Reporter, page 148.*—The railroad company named was charged with violating the federal safety appliance act, the provisions and application of which with reference to certain details were discussed in the charge of Judge Dodge to the jury in the trial of the case. The following syllabus, prepared by the court, presents the rules of law governing the operation of railroads in the respects indicated:

1. Section 4 of the safety appliance act (Act March 2, 1893, c. 196, 27 Stat. 531 [U. S. Comp. St. 1901, p. 3174]) requires secure grabirons or handholds at those points in the end of each car where they are reasonably necessary in order to afford to men coupling or uncoupling cars greater security than would be afforded them in the absence of any grabiron or handhold at that point or of any appliance affording equal security with a grabiron or handhold.

2. If at any place in the end of a car there is not a grabiron or handhold, properly speaking, but some other appliance, such as a ladder or brake lever, which afforded equal security with a grabiron or a handhold at that point, the federal safety appliance law (Act March 1893, c. 196, 27 Stat. 531 [U. S. Comp. St. 1901, p. 3174]), so far as grabiron or handhold at that point is concerned, has not been violated. Having something there which performs all the functions of a grabiron or handhold is just the same thing as having what is properly called a grabiron or handhold at that point.

3. Unless the government satisfies a jury by a preponderance of the evidence that there was no grabiron or handhold on the car where there should have been one, the jury should find for the railroad company.

4. A man in connecting or disconnecting the air hose between the cars is engaged in coupling or uncoupling cars within the meaning of the safety appliance act (Act March 2, 1893 c. 196, 27 Stat. 531 [U. S. Comp. St. 1901, p. 3174]), if it is necessary for him to connect or disconnect that hose in order to connect or disconnect the cars.

5. Where a car is not properly provided with grabirons on a given day, and the train stops for a certain time and then goes on again,

there are not two violations of the law, but only one, because the car is all the time being moved in the same train. It makes no difference that it is being so moved on two different days.

6. A "train, within the safety appliance act," is one aggregation of cars drawn by the same engine, but if the engine is changed then there is a different train.

DECISIONS UNDER COMMON LAW.

Employers' Liability—Dangerous Instrumentalities—Degree of Care—Extraordinary Occurrences—"Act of God"—Negligence—Presumptions as to Contributory Negligence—Assumption of Risk.—*Brown v. West Riverside Coal Company, Supreme Court of Iowa, 120 Northwestern Reporter, page 732.*—This case was an action to recover damages for the death of one Brown, an employee of the coal mining company, due, as was alleged, to its negligence. Judgment was recovered for the plaintiff in the district court of Polk County, from which judgment the mining company appealed. The appeal resulted in the affirmation of the judgment of the court below. The mining company was engaged in the sinking of a shaft for mining purposes and Brown was employed to operate the engine used in hoisting the excavated material. Three shifts of men were used at the work, Brown being on the night shift. The engine that Brown operated was under a mere shed, and did not afford protection against storms, though at a distance of about sixty feet was a small frame building in which was a telephone connected with a city system, and which was used as a place where the workmen left their coats and tools. They also sometimes ate lunch there and found shelter during storms. The company used the building as a place of storage for dynamite and powder and dynamite caps, used in blasting. Brown had some knowledge of these facts, as he at times had attended to telephone calls and had carried powder and dynamite from the building to the mining shaft. Near the close of the night shift on July 19, 1905, a violent rainstorm occurred, accompanied by thunder and lightning, during which the dynamite and powder in the shanty exploded and Brown and his four fellow-workmen, constituting the entire shift, were found to have been killed. No immediate witnesses were available. A woman at a distance of a mile and a half had noticed the lightning stream down in the direction of the shanty and saw the explosion follow almost instantaneously. The nearest neighbor and first arrival at the scene found the broken strands of telephone wire dragging on the ground and noticed that they occasionally emitted sparks. To him the sound of explosion and the noise of thunder following the lightning stroke seemed to unite in a single crash. A visitor at the shanty earlier in the evening noticed the unused powder, dynamite, and caps, and said that some of the caps were directly under the telephone instrument. These caps are described as being very sensitive and easily exploded. Brown's body was found at a distance of thirty feet from his engine and forty feet from the location of the shanty. There were no powder marks on his face. His legs were torn off, but the remainder of his body was not badly mutilated. The bodies of the other workmen were for the most part torn in fragments. The mining company asked for a verdict in its favor at the first trial, on the ground that the evidence failed to show negligence on its part; or, if there was negligence, that it was the proximate cause of Brown's death. They further contended that the plaintiff had failed to show that Brown himself was clear of contributory negligence, and it was practically on the refusal of the court to give the instructions desired that the appeal was based.

The opinion of the court was delivered by Judge Weaver, and is, in its main points, as follows:

The first assignment of error argued by counsel is grounded upon the refusal of the trial court to hold as a matter of law that plaintiff had failed to establish any negligence on the part of the defendant with respect to the matters alleged in the petition. Argument would hardly seem necessary to show the unsoundness of this proposition. There is, of course, no negligence in the mere fact that defendant employed explosives in sinking the shaft of its mine, for such is the usual and approved, if not a necessary, method by which work of this kind is accomplished; but the fact that such dangerous instrumentalities may be properly used without exposing the employer to a charge of negligence does not by any means imply that he is discharged from the ordinary obligation to use reasonable care to protect his servants against injury therefrom. Indeed reasonable care demands increased watchfulness and greater caution in proportion to the dangerous nature of the instrumentality employed; that is, "due care" means care which is reasonably commensurate with a known danger and the seriousness of the consequences which are liable to follow its omission. Nor is negligence negatived by the fact that the explosion was an unusual or extraordinary occurrence—if there was negligence in creating the conditions. (Dulligan *v.* Barber (Mass.) 87 N. E. 567.)

It is also argued that, even if the defendant was negligent in keeping the explosives in the shanty, we are wholly without evidence from which to find that this failure of duty was the proximate cause of the disaster. "Who can tell," counsel ask, "what was the cause of the explosion—whether lightning, or some reckless or thoughtless act of the workmen? If it was lightning, who can tell whether the stroke was not itself fatal to the men there assembled independent of the resulting explosion? If the death of the party resulted by the explosion of the powder and dynamite, and they were discharged by a bolt of electricity, is not this an independent intervening agency which breaks the line of causation between the defendant's negligence and the death of the plaintiff's intestate?" The argument is a plausible one, but we think it can not prevail. It is very true that it is not within human power to discover and make known with certainty all of the immediate circumstances attendant upon this tragedy, but such exact and detailed proof is not required. Courts and juries are not infrequently confronted by cases in which the ultimate facts of cause and effect are to be found, not so much from direct proof of the circumstances as they exist at the instant of the injury complained of, as from proof of conditions existing before and after its occurrence. The plaintiff is not required to make his case beyond a reasonable doubt. It is sufficient if the circumstances be such as to justify a reasonable inference of the truth of the matters charged. (2 Encyc. Evidence, p. 956.)

In most cases the relation between cause and effect is a matter of inference only, but the conclusion is none the less satisfactory to the reasonable mind. A finding that the life of the deceased in this case was destroyed by the explosion of the powder and dynamite, and not by the lightning stroke, has ample support in the record. The place where the body was found and the manner in which it was dismembered point unmistakably to the explosion as an all-sufficient explanation of the cause of his death, while there is not the slightest circumstance to support the theory that he was killed by lightning. In Brownfield *v.* Railroad Co., 107 Iowa 258, 77 N. W. 1038, we stated the rule to be that: "When a cause is shown which might produce an accident in a certain way, and an accident happens in that manner, it is a warrantable presumption, in the absence of showing of other cause, that the one known was the operative agency in bringing about the result." This feature of the case presents a question upon which there is much confusion in the authorities, and decisions may readily be found that, where some uncontrollable manifestation of nature unites with human negligence in causing injury to persons or property, the negligence of the human agent is treated as a condition, and not a cause of the injury, and relieves him from legal liability. The origin of this rule is hinted at in the ancient formula by which every destructive exhibition of the laws of nature was denominated "an act of God," from which idea it was easy to reach the pious conclusion that an injury which had been caused or contributed to by the hand of God ought not to be made the basis for the recovery of damages before human tribunals; but this theory has been discarded by many courts, and among them is our own. The subject was treated with great thoroughness by Mr. Justice McClain in Shoe Co. *v.* Railroad Co., 130 Iowa 123, 106 N. W. 498, 5 L. R. A. (N. S.) 882, and by Mr. Justice Deemer in Vyse *v.* Railroad Co., 126 Iowa 90, 101 N. W. 736. The rule is there laid down that, when negligence of a responsible person concurs with a flood or storm or other so-called "act of God" in producing an injury, the party guilty of such negligence will be held liable for the injurious consequences, if the injury would not have happened but for his failure to exercise care. That a person whose negligence is the primary cause is not excused because a stroke of lightning intervenes to precipitate an injury, see Jackson *v.* Telephone Co., 88 Wis. 243, 60 N. W. 430.

It is to be observed, in this connection, that plaintiff charges the defendant not only with negligence in keeping the explosives in the shanty, but also alleges that it negligently increased the hazard thus created by establishing a telephone in the same room with connecting wire or wires, upon which in case of storms an overcharge of electricity was liable to be conducted causing the ignition of the powder, dynamite, or caps. The fact of installing and connecting the telephone as alleged is not denied, but it is said there is no evidence that this condition had anything to do with the accident. No witness testifies—none can testify—that lightning did strike the building, or that electricity in dangerous force did enter it over the wire; but proof of a condition which rendered such results possible was a material circumstance with reference to the safety of the place. (See Jackson *v.* Telephone Co., supra.) The liability of telephone wires to be surcharged with electricity during violent storms is well known to all persons familiar with their use. It is shown by plaintiff's witnesses that the broken end of this particular wire continued to emit sparks for some time after the explosion, indicating that by reason of the condition of the atmosphere, or because of contact with other conductors carrying heavy currents, electricity in quantities capable of doing the alleged mischief was being brought into the immediate vicinity where the explosives had been stored; but we think it is not incumbent upon the plaintiff to point out or demonstrate the manner in which the explosives were ignited. Indeed it would not necessarily be a defense to the action, even if the record should demonstrate beyond all doubt that the immediate cause of the explosion was not chargeable to the negligence of any person. If the defendant was negligent in depositing the powder and dynamite in a place where their accidental ignition would necessarily endanger the lives of its servants, such negligence would be the proximate cause of the resulting injury, notwithstanding the source of the spark which explodes them be purely accidental or wholly unknown. (Tissue *v.* Railroad Co., 112 Pa. 91, 3 Atl. 667, 56 Am. Rep. 310.) That blasting powder and other high-power explosives of modern invention are liable to accidental ignition, with destructive consequences, even where apparently reasonable care is exercised to prevent such occurrence, has been too frequently proven by recurring disasters to call for argument, and, if there be lack of reasonable care in storing them too near the servant's place of work, such negligence is not purged by the exercise of care in other respects.

As in all personal injury cases, there must be testimony from which the jury can properly find freedom from contributory negligence on the part of the deceased in order to sustain a recovery of damages. In this respect it is contended that the plaintiff has failed. It must be remembered, however, that in the utter absence of living witnesses there is a presumption that the deceased, actuated by the natural instincts of self-preservation, was in the exercise of reasonable care for his own safety. [Cases cited.] True this presumption is not conclusive and may be rebutted by proof of circumstances tending to the opposite conclusion, but such proof can rarely, if ever, be made so clear and unmistakable as to enable the court to dispose of the issue thus presented as a matter of law. Even if it should be said that reasonable care on the part of the deceased would have forbidden his entrance to the shanty under the circumstances then surrounding him, it is a sufficient answer that it is by no means certain that he did enter or was in the building when the explosion occurred. The question of contributory negligence was properly left to the jury.

The conclusions already announced dispose of the principal issues presented in this case, except the defense of assumption of risk pleaded by the defendant. It is a familiar doctrine that the servant assumes all risks which inhere in or are incident to the nature and kind of service which he undertakes to perform, and, if such service involves the use of explosives or other dangerous instrumentalities, he takes upon himself the chances of all injury to which he may be exposed by their reasonable and proper use; but, as we have often had occasion to say, the servant does not assume any risk created by the negligence of his master unless he knows and appreciates, or as a reasonably prudent person ought to know and appreciate, the peril arising from the master's negligence, and chooses to remain in the service, in which latter event he is barred from the recovery of damage if injured. Assumption of risk on account of the master's negligence is an affirmative defense. It has been properly pleaded in the case before us and presents the most seriously debatable question argued by counsel. A careful consideration of the record inclines us to the view that in this, as in other respects mentioned, there was no error in submitting the issue to the jury. It must not be overlooked that, as already stated, this defense is affirmative in character, and that the issue thus presented is one of fact on which the parties are entitled to have a verdict unless the opposing view is one upon which reasonable minds are not likely to differ. The testimony tends to show that, until coming into the service of the defendant, Brown had no experience in mining or in sinking mine shafts. It does not appear that he had any prior experience in works of excavation or in the care or use of explosives. While it is shown that at times, though not repeatedly, he carried dynamite from the shanty to the shaft, and doubtless knew in a general way that it was a powerful explosive, it is at least doubtful whether he was aware of its sensitive character or understood the gravity of the peril to which those working in the vicinity were thereby exposed. The seeming indifference or confidence manifested by the defendant's managers in depositing and keeping these materials in the same shelter provided for the use and convenience of the workmen would naturally quiet the fears of an inexperienced employee. So far as shown, he was given no instructions or warning concerning the danger to be apprehended from this source. There is no charge of negligence in failing to warn or instruct the deceased with respect to this danger, but, in considering his conduct with reference to the question of assumption of risk, the fact whether he did have such notice or warning is relevant and material, because the rule as to assumption of risk has its basis in the servant's actual or constructive knowledge of the peril to which he is exposed. In view therefore of all the circumstances disclosed by the record and the law which places the burden of establishing this defense upon the master, we can not say there was any error in submitting it to the finding of the jury.

EMPLOYERS' LIABILITY—INJURIES CAUSED BY THIRD PERSONS—LIABILITY BETWEEN THEMSELVES OF JOINT WRONGDOERS—RELEASE BY PARENTS FOR INJURIES TO MINOR—*Galveston, Harrisburg, and San Antonio Railway Company v. Pigott, Court of Civil Appeals of Texas, 116 Southwestern Reporter, page 841.*—This is a case in which Michael Pigott and his wife, Mary, sued the above-named company to recover damages for the death of their son, Thomas, caused, as alleged, by the negligence of the company in whose employ he was at the time of his death. Thomas Pigott met his death while working underneath a metallic tank, where he received an electric shock by reason of the negligent charging of the tank by electricity from the wire used in lighting the interior of the tank. The electricity was supplied by the San Antonio Gas and Electric Company, which was made a party defendant in the case at the first hearing. The case was dismissed as against the lighting company, however, and judgment was rendered for $10,000 against the railway company in the district court of Bexar County. From this judgment the railway company appealed, claiming that as between itself and the lighting company, the latter was responsible for the defective conditions which caused the death of Pigott.

The company also assigned as error the ruling of the lower court on the question of the validity of a contract entered into by the parents of Thomas Pigott at the time of his entering into the employment of the railway company. Young Pigott was a minor and his parents agreed not to hold the company responsible for any injury which might befall him during the course of his employment, and the ruling of the district court that this contract was void was made the subject of an objection.

The finding of the lower court that the lighting company was not responsible for the injury was reversed, and its finding as to the invalidity of the contract of release was affirmed. The judgment, therefore, was that, as to the plaintiffs in the original trial, they should recover the damages awarded on condition of a remittance of $2,500 of the $10,000 damages allowed, and as between the railway company and the lighting company a new trial should be had.

The opinion of the court was delivered by Judge Neill and is reproduced in part below.

The first question taken up was that of the comparative liability of the two companies, the court considering the two probable grounds upon which the lighting company was held not to be liable, and disposing of them as indicated in the quotation from this part of his opinion.

(1) That article 3017, Rev. St. 1895, giving actions resulting in death, has no application to parties other than the proprietor, owner, charterer, or hirer of a railroad, steamboat, stagecoach, or other vehicles for the conveyance of goods or passengers, and that, as the allegations in the answer negative the idea that the electric company is any such person or corporation, it can in no way be held liable in damages for injuries resulting in death; or (2) that there can be no contribution between joint tortfeasors, or recovery over by one against the other of damages for which either is liable. Is either of these a sufficient ground for sustaining the electric company's general exception to the part of the railroad's answer, which seeks to recover over

against this appellee in the event of a recovery over against the appellant? If not, then we can perceive no reason why the exception to that part of defendant's answer should be sustained.

We believe there is nothing in the first objection suggested to that part of the answer to which the exception was sustained. The grounds for this belief are fully exposed in the opinion of this court in the case of San Antonio Gas & Electric Co. *v.* Badders, 103 S. W. (Tex. Civ. App.) 229, which closes the question and renders further discussion of it unnecessary. The second ground suggested as one upon which the court might have sustained the exception to the answer is not so easily disposed of. The general rule that there can be no contribution or indemnity as between wrongdoers is founded on the maxim that no one can make his own misconduct the ground for an action in his own favor. If he suffers because of his own wrongdoing, the law will not relieve him, for it can not recognize a right as springing from a wrong in favor of one concerned in its commission. But there is an exception to this rule, under which, although the law holds all the parties liable as wrongdoers to the injured party, if, as between themselves, one of them is blameless, equity requires the one guilty of the wrong to indemnify the one who is guiltless for all damages that may be recovered against him by reason of his (wrongdoer's) wrongful acts. This exception is as well established as the rule itself.

Upon carefully considering the answer in the light of the principles stated, we conclude that, if the allegations are true, it states a case against the electric company that falls within the exception stated, showing that such company was the party whose active negligence was primarily the proximate cause of Thomas Pigott's death, and that, if the appellant was guilty of any negligence, it was only passive and secondary. In such event, it is entitled to recover over against the electric company as the active wrongdoer, whose wrongs alone rendered the appellant liable on account of the relation of master and servant and its correlative duties, which existed between it and the deceased at the time he was killed.

Judge Neill then took up the question of contract of waiver and said:

The third and fourth assignments of error, which relate to the judgment in favor of plaintiffs against appellant, complain that the court erred in sustaining the exceptions to that part of appellant's answer which pleads, in avoidance of plaintiffs' action, the contract of employment of deceased, during his minority, that they made with defendant, in which they expressly waived any and all claims they might have against the company for damages in the event their son should be killed or injured while in its employment. The exceptions were: (1) That the part of the contract waiving any claim for damages that might accrue is void, in that it is against public policy and seeks to exempt the company from its liability for injuries resulting in death caused by its own negligence; and (2) that it is without consideration, either good or valid in law. As it is conclusively shown that plaintiffs' son was killed during his minority, and while the contract of employment referred to in the assignments was in force, and deceased was in discharge of his duties under the contract, if the stipulation therein by plaintiffs, waiving any claim they might have against the company for damages in event Thomas was killed or injured while in the employment, is valid, it logically follows that the court was in error in sustaining the exceptions. The question is: Is such stipulation valid?

"It is generally held," says Page on Contracts (section 367), "that an employer can not release himself for liability for injury to his employee caused by his own negligence. * * * Invalid contracts of this class are most commonly entered into between railroads and their employees"—citing Roesner *v.* Hermann (C. C.) 8 Fed. 782, 10 Biss. 486; Chicago, etc. Coal Co. *v.* Peterson, 39 Ill. App. 114; Blanton *v.* Dold, 109 Mo. 64, 18 S. W., 1149, [etc.].

Continuing, the same author says: "So a contract whereby the next of kin of an employee of a railroad releases the railroad from all liability to himself for an injury to such employee was held void"—citing Tarvell *v.* Railroad, 73 Vt. 347, 51 Atl. 6, 56 L. R. A. 656, 87 Am. St. Rep. 734. "Even where power is given to a railroad to 'farm out' its right of transportation, it can not insert a valid provision in a lease exonerating itself from liability to lessee's negligence"—citing, Harden *v.* Railroad, 129 N. C. 354, 40 S. E. 184, 55 L. R. A. 784, 85 Am. St. Rep. 747. Cooley on Torts ([3d Ed.] p. 1485), after mentioning carriers and telegraph companies as among those who can not relieve themselves from liability from their own negligence, says: "The cases of carriers and telegraph companies have been specifically mentioned because it is chiefly in these cases that such contracts are met with but, although the reasons which forbid such contracts have special force in the business of carrying persons and goods, and of sending messages, they apply universally, and should be held to defeat all contracts by which a party undertakes to put another at the mercy of his own faulty conduct." The author, then, in a marginal note, says: "A contract exempting the master from liability to his servant for negligence is void." It is stated, however, in Shearman & Redf. on Neg. Sec. 241d, that in some American courts it is held that a servant can by express contract release his master from all liability for the ordinary negligence of the master. This holding is also noticed in the section of Page on Contracts, above quoted from, and, among the cases holding it, is cited I. & G. N. Ry. *v.* Hinzie, 82 Tex. 623, 18 S. W. 681, relied upon by appellant to sustain the assignments under consideration. That case, though not referred to in the opinion, seems to have been overruled by the court of civil appeals of the second district in T. & P. Ry. Co. *v.* Putnam, 94 Tex. 523, 62 S. W. 910, which holds, in accordance with the weight of authority, as stated in this opinion, and, as the supreme court approved the opinion in the Putnam Case by denying a writ of error, we think we are safe in saying that the Hinzie Case is no longer authority on the question under consideration.

It would seem an enormity to sanction a contract which exempts one from liability for the death of a human being which he has brought about by his one [own] negligence. "Negligent homicide" is an offense under the law of this State, and it is universally held that it is contrary to public policy to uphold a contract which exempts the wrongdoer from liability for the consequence of an act done in violation of a criminal statute. Besides, in jurisdictions where such contracts are recognized as valid, it is held that there must be a good consideration for such a contract, and if made while the servant is in his employment, without a new consideration, it is void. As seen, one of the exceptions urged to the plea setting up the contract as a defense was that it was without consideration to support it. We believe this objection good. Under the contract the consideration recited is no consideration at all. The parents waived everything—their right to recover their son's wages, as well as their right to recover damages, vouchsafed them by the law, in the event he was killed or injured while in the employment of the company—and got nothing in the world except the piece of paper upon which the alleged contract was written. Their damages caused by the death of their son, caused by defendant's unlawful act, was, if the verdict be correct, $10,000, and yet if the contract, under which they received nothing, is sustained, they have waived their right to these damages and can not receive $1 of the amount. Is this reasonable? No. Yet it is not only essential to the validity of a contract of this nature, even in jurisdiction where they are recognized, that there be a consideration, but that it must be reasonable, i. e., there must be a just proportion between the consideration for the waiver of the damages and the amount of damages actually sustained. We overrule the assignments.

Interference with Employment—Trade Competition—Unjustifiable Acts—Motive—*Tuttle v. Buck, Supreme Court of Minnesota, 119 Northwestern Reporter 946.*—This was an appeal from the district court of Rice County, in which Edward C. Tuttle had secured a judgment against Cassius M. Buck, for interference with the former's business.

Tuttle was a barber by trade, and had been so employed for a number of years in the village of Howard Lake, Minn., as his sole means of livelihood. Buck was a banker, and, for some reason not explained, was alleged to have set up a barber shop and attempted to introduce a rival barber for the sole and only purpose of injuring the trade of the plaintiff and of ruining his business and driving him out of the village. It was further alleged that Buck was not able to induce any barber to occupy the shop on his own account, though offered at a nominal rental, and that he had at different times hired barbers at a salary to occupy the shop and attend to such customers as Buck might persuade or induce to leave the plaintiff. It is further alleged that all these things were done by the defendant with the sole purpose of destroying plaintiff's business, and not for the purpose of any legitimate interest of his own; and that by reason of the wealth and prominence of the defendant, and of his personal and financial influence, he had been able to materially reduce the business of the plaintiff, Tuttle, for which damages were sought.

On appeal the judgment of the court below was affirmed on the grounds set forth in the following extracts from the opinion of the court, which was delivered by Judge Elliott:

It has been said that the law deals only with externals, and that a lawful act can not be made the foundation of an action because it was done with an evil motive. In Allen *v.* Flood, (1898) A. C. 151, Lord Watson said that, except with regard to crimes, the law does not take into account motives as constituting an element of civil wrong. In Mayor *v.* Pickles, (1895) A. C. 587, Lord Halsbury stated that if the act was lawful, "however ill the motive might be, he had a right to do it." In Raycroft *v.* Tayntor, 68 Vt. 219, 35 Atl. 53, the court said that, "where one exercises a legal right only, the motive which actuates him is immaterial." In Jenkens *v.* Fowler, 24 Pa. 318, Mr. Justice Black said that "mischievous motives make a bad case worse, but they can not make that wrong which in its own essence is lawful." This language was quoted in Bohn Mfg. Co. *v.* Hollis, 54 Minn. 233, 55 N. W. 1119, and in substance in Ertz *v.* Produce Exchange, 79 Minn. 143, 81 N. W. 737. (See, also, Cooley, Torts (3d Ed.) p. 1505; Auburn & Co. *v.* Douglass, 9 N. Y. 444.) Such generalizations are of little value in determining concrete cases. They may state the truth, but not the whole truth. Each word and phrase used therein may require definition and limitation. Thus, before we can apply Judge Black's language to a particular case, we must determine what act is "in its own essence lawful." What did Lord Halsbury mean by the words "lawful act?" What is meant by "exercising a legal right?" It is not at all correct to say that the motive with which an act is done is always immaterial, providing the act itself is not unlawful. Numerous illustrations of the contrary will be found in the civil as well as the criminal law.

We do not intend to enter upon an elaborate discussion of the subject, or become entangled in the subtleties connected with the words "malice" and "malicious." We are not able to accept without limitations the doctrine above referred to, but at this time content ourselves with a brief reference to some general principles.

For generations there has been a practical agreement upon the proposition that competition in trade and business is desirable, and this idea has found expression in the decisions of the courts as well as in statutes. But it has led to grievous and manifold wrongs to individuals, and many courts have manifested an earnest desire to protect the individuals from the evils which result from unrestrained business competition. The problem has been to so adjust matters as to preserve the principle of competition and yet guard against its abuse to the unnecessary injury to the individual. So the principle that a man may use his own property according to his own needs and desires, while true in the abstract, is subject to many limitations in the concrete. Men can not always, in civilized society, be allowed to use their own property as their interests or desires may dictate without reference to the fact that they have neighbors whose rights are as sacred as their own. The existence and well-being of society requires that each and every person shall conduct himself consistently with the fact that he is a social and reasonable person. The purpose for which a man is using his own property may thus sometimes determine his rights, and applications of this idea are found in Stillwater Water Co. *v.* Farmer, 89 Minn. 58, 93 N. W. 907, Id., 92 Minn. 230, 99 N. W. 882, and Barclay *v.* Abraham, 121 Iowa, 619, 96 N. W. 1080.

Many of the restrictions which should be recognized and enforced result from a tacit recognition of principles which are not often stated in the decisions in express terms. Sir Frederick Pollock notes that not many years ago it was difficult to find any definite authority for stating as a general proposition of English law that it is wrong to do a willful wrong to one's neighbor without lawful justification or excuse. But neither is there any express authority for the general proposition that men must perform their contracts. Both principles, in this generality of form and conception, are modern and there was a time when neither was true. After developing the idea that law begins, not with authentic general principles, but with the enumeration of particular remedies, the learned writer continues: "If there exists, then, a positive duty to avoid harm, much more, then, exists the negative duty of not doing willful harm, subject, as all general duties must be subject, to the necessary exceptions. The three main heads of duty with which the law of torts is concerned, namely, to abstain from willful injury, to respect the property of others, and to use due diligence to avoid causing harm to others, are all alike of a comprehensive nature." (Pollock, Torts, (8th Ed.) p. 21.) He then quotes with approval the statement of Lord Bowen that "at common law there was a cause of action whenever one person did damage to another, willfully and intentionally, without just cause and excuse." In Plant *v.* Woods, 176 Mass. 492, 57 N. E. 1011, Mr. Justice Hammond said: "It is said, also, that, where one has the lawful right to do a thing, the motive by which he is actuated is immaterial. One form of this statement appears in the first headnote in Allen *v.* Flood, as reported in (1898) A. C. 1, as follows: 'An act lawful in itself is not converted by a malicious or bad motive into an unlawful act, so as to make the doer of the act liable to a civil action.' If the meaning of this and similar expressions is that, where a person has the lawful right to do a thing irrespective of his motive, his motive is immaterial, the proposition is a mere truism. If, however, the meaning is that where a person, if actuated by one kind of a motive, has a lawful right to do a thing, the act is lawful when done under any conceivable motive, or that an act lawful under one set of circumstances is therefore lawful under every conceivable set of circumstances, the proposition does not commend itself to us as either logically or legally accurate." Similar language was used by Mr. Justice Wells in Walker *v.* Cronin, 107 Mass. 555; by Lord Coleridge in Mogul Steamship Co. *v.* McGregor, 21 Q. B. D. 544–553; by Lord Justice Bowen in the same case, 23 Q. B. D. 593; by Mr. Justice Holmes in Aikens *v.* Wisconsin, 195 U. S. 194, 204, 25 Sup. Ct. 3; by Chief Justice McSherry in Klingel's Pharmacy *v.* Sharp, 104, Md. 233, 64 Atl. 1029; and by Judge Sanborn in his dissenting opinion in Passaic Print Works *v.* Ely & Walker Dry Goods Co., 105 Fed. 163, 44 C. C. A. 426. Numerous cases will be found referred to in the note to this case in 62 L. R. A. 673, and in an article in 18 Harvard Law Review, 411.

It is freely conceded that there are many decisions contrary to this view; but, when carried to the extent contended for by the appellant, we think they are unsafe, unsound, and illy adapted to modern conditions. To divert to one's self the customers of a business rival by the offer of goods at lower prices is in general a legitimate mode of serving one's own interest, and justifiable as fair competition. But when a man starts an opposition place of business, not for the sake of profit to himself, but regardless of loss to himself, and for the sole purpose of driving his competitor out of business, and with the intention of himself retiring upon the accomplishment of his malevolent purpose, he is guilty of a wanton wrong and an actionable tort. In such a case he would not be exercising his legal right, or doing an act which can be judged separately from the motive which actuated him. To call such conduct competition is a perversion of terms. It is simply the application of force without legal justification, which in its moral quality may be no better than highway robbery.

Nevertheless, in the opinion of the writer this complaint is insufficient. It is not claimed that it states a cause of action for slander. No question of conspiracy or combination is involved. Stripped of the adjectives and the statement that what was done was for the sole purpose of injuring the plaintiff, and not for the purpose of serving a legitimate purpose of the defendant, the complaint states facts which in themselves amount only to an ordinary everyday business transaction. There is no allegation that the defendant was intentionally running the business at a financial loss to himself, or that after driving the plaintiff out of business the defendant closed up or intended to close up his shop. From all that appears from the complaint he may have opened the barber shop, energetically sought business from his acquaintances and the customers of the plaintiff, and as a result of his enterprise and command of capital obtained it, with the result that the plaintiff, from want of capital, acquaintance, or enterprise, was unable to stand the competition and was thus driven out of business. The facts thus alleged do not, in my opinion, in themselves, without reference to the way in which they are characterized by the pleader, tend to show a malicious and wanton wrong to the plaintiff.

A majority of the justices, however, are of the opinion that, on the principle declared in the foregoing opinion, the complaint states a cause of action, and the order is therefore affirmed.

LABOR ORGANIZATIONS—SUSPENSION OF MEMBERS—INTERFERENCE WITH EMPLOYMENT—CONSPIRACY—DAMAGES—*Campbell et al. v. Johnson, United States Circuit Court of Appeals, 167 Federal Reporter, page 102.*—The defendant, Johnson, had been suspended from the Seattle Typographical Union, No. 202, as he claimed, by a wrongful and harmful conspiracy of other members, and had recovered a judgment for damages in the amount of $500 on account of such harmful exposure. From this judgment of the circuit court an appeal was taken to the circuit court of appeals, which resulted in the judgment of the lower court being affirmed. It appears that Johnson was night foreman on the Seattle Daily Times, and that there was a complaint that matters occurring at meetings of the union which were supposed to be private were in some manner being exposed at the Times office, and a committee of the union was appointed to investigate. All members of the union who were employed in the office of the Times were questioned and answered the questions with the exception of Johnson. At the next regular meeting of the union the matter of his refusal to answer the questions put to him came up, and by a vote of 100 to 3 he was declared to be in contempt of the committee of investigation and was suspended for thirty days. Two days thereafter Johnson was informed of the action of the union, as were also the managing officers of the Daily Times. He was thereupon suspended from his position as night foreman and notified by his employers that he must prosecute his appeal to the president of the International Typographical Union within two weeks or he would be discharged. Johnson made his appeal and was sustained, but in the meantime had been discharged by his employers and was prevented from obtaining any other position. To Johnson's complaint setting up these facts, the union, through its agents and representatives, interposed a demurrer that the complaint failed to state facts sufficient to constitute a cause of action. Other points were also raised which involved matters of practice and procedure, which need not be noticed here.

The rules of the union authorized it to fine, reprimand, or suspend from membership any member who had been declared guilty of contempt, and it provided, further, for a series of appeals by anyone aggrieved by such action. The union further held that if any injustice had been done by suspension he had full and adequate redress by such appeals as had been provided for by the union. To this defense Johnson demurred, claiming that the facts were not sufficient to constitute a defense, which demurrer was sustained. Judge Gilbert, who gave the opinion of the court, after stating the facts as set forth above, spoke in part as follows:

Error is assigned to the ruling of the court in sustaining the demurrer to the affirmative defense alleged in the answer. The substance of that defense was that the rules of Union 202 provided for the suspension of a member who has been declared guilty of contempt by a two-thirds vote of the union, and for an appeal from such decision; that, in fact, the defendant in error was so suspended for a period of 30 days by the vote of the union; and that, if injustice was done him thereby, he had a remedy by appeal. But the gist of the cause of action alleged in the complaint is that the plaintiffs in error wrongfully and unlawfully entered into a conspiracy to suspend unlawfully the defendant in error from the union, and to prevent him from following his usual occupation, and that the conspiracy was carried out. It may be assumed that in all associations of a similar character provision is made for the suspension or dismissal of members. The fact that the members had that power, and that provision was made for appeal, does not affect the question of their liability in case of a conspiracy such as was alleged in the complaint. In charging the jury the court expressed the opinion that the motion for a nonsuit would have been granted if the evidence had been clear that the position of the defendant in error would have been retained for him after the period of suspension, but decided to submit to the jury on the evidence the question whether the suspension necessarily deprived him of his position by bringing about a permanent discharge. The members of the union undoubtedly had the right to suspend the defendant in error, but that is not to say that they had the right to conspire together to suspend him unlawfully.

It is earnestly contended that the trial court erred in denying the motion of the plaintiffs in error at the close of the evidence for a directed verdict in their favor on the ground that the evidence was not sufficient to show a cause of action against them. We are unable to sustain this contention. There was evidence of strong personal feeling against the defendant in error on the part of many members of the union. He had twice before been fined by the union on account of alleged breaches of its rules, and on each occasion he had appealed to the International Typographical Union, and his appeal had been sustained. At one of the meetings one of the plaintiffs in error had stated that he was after the defendant in error's scalp, and he was roundly applauded. Other members had said: "We will get him yet," "We will have his card," and made other expressions of their ill will toward him. There was evidence that his refusal to testify before the committee, for which he was charged with contempt, was not contempt, and that, according to the rules of the union, he could not be required to testify against himself. It is not denied that he was furnished no copy of the charges on which he was finally suspended, and that he had no notice to appear and was not present at the meeting at which he was suspended. There was evidence that the officers of the union refused to allow him an appeal, and refused to show him the record on which he had been suspended, and that he was compelled to take this appeal by telegraphing his own affidavit to the president of the International Typographical Union. It sufficiently appears, also, that he was discharged from his position on account of his troubles with the union and his suspension therefrom, and the hostile attitude of the members of the union.

There are numerous assignments of error to the rulings of the court in admitting and excluding evidence. We find no error in any of them.

It is contended that the court erred in charging the jury as follows:

"It is not required for the plaintiff to prove in this case a criminal conspiracy. The only kind of conspiracy that has to be proved is that there was a common purpose and a concert of action with the plain intent in the minds of the different persons to cause the suspension of the plaintiff from membership in the union. If that purpose existed and was successful in causing his suspension, and the members who were participants in that knew that the necessary consequence of the suspension would be the loss of his position, then the jury have a right to find from these conditions that their purpose was to injure him," etc.

It is urged against this instruction that the court thereby took away from the jury the consideration of all question of malice or ill will on the part of the plaintiffs in error. But elsewhere the court gave the jury an instruction which is to be read in connection with the instruction above quoted. The court said:

"And the decision of the case turns upon the question of whether the defendants did anything from malice and ill will, and by a concert of action, with a common purpose to do an injury, or whether they, as members of an association, acting in good faith and without malice and without ill will, acted in accordance with their best judgment to promote the interests of the association."

We find no error for which the judgment should be reversed. It is accordingly affirmed.

LAWS OF VARIOUS STATES RELATING TO LABOR ENACTED SINCE JANUARY 1, 1908.

The Twenty-second Annual Report of this Bureau contains all laws of the various States and Territories and of the United States relating to labor, in force January 1, 1908. It is the purpose of the Bureau to discontinue the publication of the session laws in bimonthly installments, as has been done heretofore, and to publish such laws in a single bulletin as soon as the enactments of the year become available, thus presenting in one issue of the Bulletin all amendments and new legislation supplementary to the volume of labor laws named above.

CUMULATIVE INDEX OF LABOR LAWS AND DECISIONS RELATING THERETO.

[This index includes labor laws enacted since January 1, 1908, and published in Bulletin No. 80, the issue of January, 1909, and Bulletin No. 81, the issue of March, 1909, since which date the bimonthly publication of laws has been discontinued. (See note, p. 685.) Laws enacted previously appear in the Twenty-second Annual Report of the Commissioner of Labor. The decisions indexed under the various headings relate to the laws on the same subjects without regard to their date of enactment and are indicated by the letter "D" in parenthesis following the name of the State.]

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State.	Name of bureau.	Title of chief officer.	Location of bureau.
UNITED STATES.			
United States	United States Bureau of Labor	Commissioner	Washington, D. C.
California	Bureau of Labor Statistics	Commissioner	San Francisco.
Colorado	Bureau of Labor Statistics	Deputy Commissioner.	Denver.
Connecticut	Bureau of Labor Statistics	Commissioner	Hartford.
Idaho	Bureau of Immigration, Labor, and Statistics.	Commissioner	Boise.
Illinois	Bureau of Labor Statistics	Secretary	Springfield.
Indiana	Bureau of Statistics	Chief	Indianapolis.
Iowa	Bureau of Labor Statistics	Commissioner	Des Moines.
Kansas	Bureau of Labor and Industry	Commissioner	Topeka.
Kentucky	Department of Agriculture, Labor, and Statistics.	Commissioner	Frankfort.
Louisiana	Bureau of Statistics of Labor	Commissioner	Baton Rouge.
Maine	Bureau of Industrial and Labor Statistics.	Commissioner	Augusta.
Maryland	Bureau of Industrial Statistics	Chief	Baltimore.
Massachusetts	Bureau of Statistics	Director	Boston.
Michigan	Bureau of Labor and Industrial Statistics.	Commissioner	Lansing.
Minnesota	Bureau of Labor	Commissioner	St. Paul.
Missouri	Bureau of Labor Statistics and Inspection.	Commissioner	Jefferson City.
Montana	Bureau of Agriculture, Labor, and Industry.	Commissioner	Helena.
Nebraska	Bureau of Labor and Industrial Statistics.	Deputy Commissioner.	Lincoln.
New Hampshire	Bureau of Labor	Commissioner	Concord.
New Jersey	Bureau of Statistics of Labor and Industries.	Chief	Trenton.
New York	Department of Labor	Commissioner	Albany.
North Carolina	Bureau of Labor and Printing	Commissioner	Raleigh.
North Dakota	Department of Agriculture and Labor.	Commissioner	Bismarck.
Ohio	Bureau of Labor Statistics	Commissioner	Columbus.
Oklahoma	Department of Labor	Commissioner	Guthrie.
Oregon	Bureau of Labor Statistics and Inspection of Factories and Workshops.	Commissioner	Salem.
Pennsylvania	Bureau of Industrial Statistics	Chief	Harrisburg.
Philippine Islands.	Bureau of Labor	Director	Manila.
Rhode Island	Bureau of Industrial Statistics	Commissioner	Providence.
South Carolina	Department of Agriculture, Commerce, and Industries.	Commissioner	Columbia.
Texas	Bureau of Labor Statistics	Commissioner	Austin.
Virginia	Bureau of Labor and Industrial Statistics.	Commissioner	Richmond.
Washington	Bureau of Labor	Commissioner	Olympia.
West Virginia	Bureau of Labor	Commissioner	Wheeling.
Wisconsin	Bureau of Labor and Industrial Statistics.	Commissioner	Madison.
FOREIGN COUNTRIES.			
Argentina	Departamento Nacional del Trabajo	Presidente	Buenos Aires.
Austria	K. K. Arbeitsstatistisches Amt im Handelsministerium.	Vorstand	Wien.
Belgium	Office du Travail (Ministère de l'Industrie et du Travail).	Directeur General	Bruxelles.
Canada	Department of Labor	Minister of Labor	Ottawa.
Canada: Ontario	Bureau of Labor (Department of Public Works).	Secretary	Toronto.
Chile	Oficina de Estadística del Trabajo	Jefe	Santiago.
Finland	Industristyrelsen (a)		Helsingfors.
France	Office du Travail (Ministère du Travail et de la Prévoyance Sociale).	Directeur	Paris.
Germany	Abteilung für Arbeiterstatistik, Kaiserliches Statistisches Amt.	Präsident	Berlin.
Great Britain and Ireland.	Labor Department (Board of Trade)	Commissioner of Labor.	London.

a Issues a bulletin of labor.

State.	Name of bureau.	Title of chief officer.	Location of bureau.
FOREIGN COUNTRIES—con'd.			
Italy	Ufficio del Lavoro (Ministero di Agricoltura Industria e Commercio).	Direttore Generale	Rome.
Netherlands	Centraal Bureau voor de Statistiek (a).	Directeur	'S-Gravenhage.
New South Wales	State Labor Bureau	Director of Labor	Sydney.
New Zealand	Department of Labor	Minister of Labor	Wellington.
Spain	Instituto de Reformas Sociales	Secretario General	Madrid.
Sweden	Afdelning för Arbetsstatistik (Kgl. Kommerskollegii).	Direktör	Stockholm.
Switzerland	Secrétariat Ouvrier Suisse (semiofficial).	Secrétaire	Zurich.
Uruguay	Oficina del Trabajo (Ministero de Industrias Trabajo é Instrucción Pública).		Montevideo.
International	International Labor Office	Director	Basle, Switzerland.

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